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Indiana University of Pennsylvania

THE UNIVERSITY OF THE TRIANGLE



University Calendar

Spring Semester, 1996

Registration	January 15
Classes begin	January 16
Spring vacation begins	March 4
Classes resume (8:00 a.m.)	March 11
Reading Day	April 30
Final exams	May 1-8
Commencement	May 11

Summer Session I, 1996

Classes begin	June 10
Holiday (no classes)	July 4
Session ends	July 12

Summer Session II, 1996

Classes begin	July 15
Classes end	August 15

Fall Semester, 1996

Registration	August 27
Classes begin	August 28
Labor Day (no classes)	September 2
Thanksgiving recess begins at end of night classes on November 26	November 27
Classes resume	December 2
Reading Day	December 10
Final exams	December 11-18
Commencement	December 15

Spring Semester, 1997

Registration	January 13
Classes begin	January 14
Spring vacation starts	March 3
Classes resume	March 10
Classes end	April 28
Reading Day	April 29
Final exams	April 30-May 7
Commencement	May 10

Indiana University of Pennsylvania

GRADUATE SCHOOL



1 9 9 6

Graduate Catalog

INDIANA, PENNSYLVANIA 15705-1081

IUP's Statement of Nondiscrimination

Indiana University of Pennsylvania is committed to equal opportunity and affirmative action for its students, employees, and applicants. The university is committed to providing equal educational and employment rights to all persons without regard to race, color, sex, religion, national origin, age, disability, ancestry, or sexual orientation.

This policy is placed in this document in accordance with state and federal laws including Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and the Civil Rights Act of 1991 as well as all applicable federal and state executive orders. This policy extends to disabled veterans and veterans of the Vietnam era.

Please direct all general inquiries regarding equal opportunity and affirmative action to:

Ms. Helen Soltis
 Interim Director of Human Resources
 G-1 John Sutton Hall
 Indiana University of Pennsylvania
 Indiana, PA 15705
 Telephone: (412) 357-2431
 TDD: (412) 357-2481
 Fax: (412) 357-2685

IUP ensures compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act through the provision of program access accommodations. Please direct inquiries regarding accommodations for persons with disabilities to:

Student Concerns:
 Ms. Cathy Dugan
 Director, Advising and Testing
 Center/Disability Support Services
 504 Coordinator
 106 Pratt Hall
 Telephone: (412) 357-4067
 Employee Concerns:
 Ms. Gini Rinkus
 Employment and Work and
 Family Programs Manager
 ADA Coordinator
 G-1 John Sutton Hall
 Telephone: (412) 357-2431

Specific inquiries regarding Title IX should be directed to:

Ms. Rhonda Luckey
 Director, Pechan Health Center
 Pechan Health Center
 Telephone: (412) 357-6475

According to IUP's Mission Statement, "...The university community must be open to all scholars regardless of race, religion, creed, age, sex, disability, or ethnic heritage..." Full participation from each member of the university community in activities that support this mission is encouraged. Each member of the university community has a right to study and work in an environment free from any form of racial, ethnic, and sexual discrimination. In accordance with federal and state laws, the university will not tolerate racial and ethnic discrimination.

Interim University Policy on Sexual Harassment

IUP affirms that sexual harassment is a violation of basic human rights, inconsistent with the purpose and principles of an academic community. Sexual harassment of students and employees is unacceptable conduct and will not be tolerated.

Any university community member who engages in sexual harassment is subject to the disciplinary process appropriate to his/her classification as an employee or student.

The right to confidentiality of all parties involved in a sexual harassment complaint shall be strictly adhered to insofar as it does not interfere with the university's legal obligation to investigate allegations of misconduct and to take appropriate corrective action.

IUP prohibits retaliatory action against individuals filing either informal or formal complaints of sexual harassment. Nothing contained in this policy protects an individual who maliciously makes false accusations. While seeking to protect those whose dignity might be compromised, it must be emphasized that false accusations of sexual harassment will not be tolerated.

Definition: Sexual harassment is a form of sex discrimination that is reprehensible and unlawful. Title IX of the education amendments of 1972 prohibits sex discrimination in employment. Sexual harassment is defined as:

- a. making unwelcome sexual advances
- b. requesting sexual favors
- c. verbal or physical conduct of a sexual nature—which submission to such conduct is made, either explicitly or implicitly, a term or condition of a person's employment or education
- d. verbal or physical conduct of a sexual nature—which has the purpose or effect of unreasonably interfering with an individual's academic, personal, or professional performance
- e. verbal or physical conduct of a sexual nature—which has the purpose or effect of unreasonably creating an intimidating, hostile, or offensive educational, social, or work environment
- f. basing employment or academic decisions upon a person's submission to or rejection of verbal or physical conduct of a sexual nature

Sexual harassment may also involve relationships among equals. In these cases repeated sexual advances or demeaning verbal behavior have a harmful effect on one's ability to study, live, or work within the academic community.

Questions regarding the Sexual Harassment Policy or complaint procedures may be directed to the Director of Human Resources, G-1 Sutton Hall, IUP. Policy approved by University Senate, May 1, 1990; pending final approval by Council of Trustees.

Inclement Weather Policy

Indiana University of Pennsylvania is committed to the safety and security of its students, faculty, staff, and visitors. Therefore, the decision as to whether the university should close or remain open during periods of adverse weather conditions is based on the overall concern for the university community. In general, however, IUP's practice will be to remain open and to conduct classes as usual during periods of inclement weather.

Closure of the university: Should adverse weather conditions arise or be anticipated that would make it inadvisable to operate the university on a given day, the president may, at his or her discretion, close the institution (i.e., cancel all classes and on-campus activities at all campuses). In the event of either a full- or partial-day closure, notification will be provided to the following radio and television stations: WDAD Radio (Indiana), WCCS Radio (Homer City), WJAC-TV (Johnstown), KDKA-TV, and WTAE Radio-1250 AM (Pittsburgh).

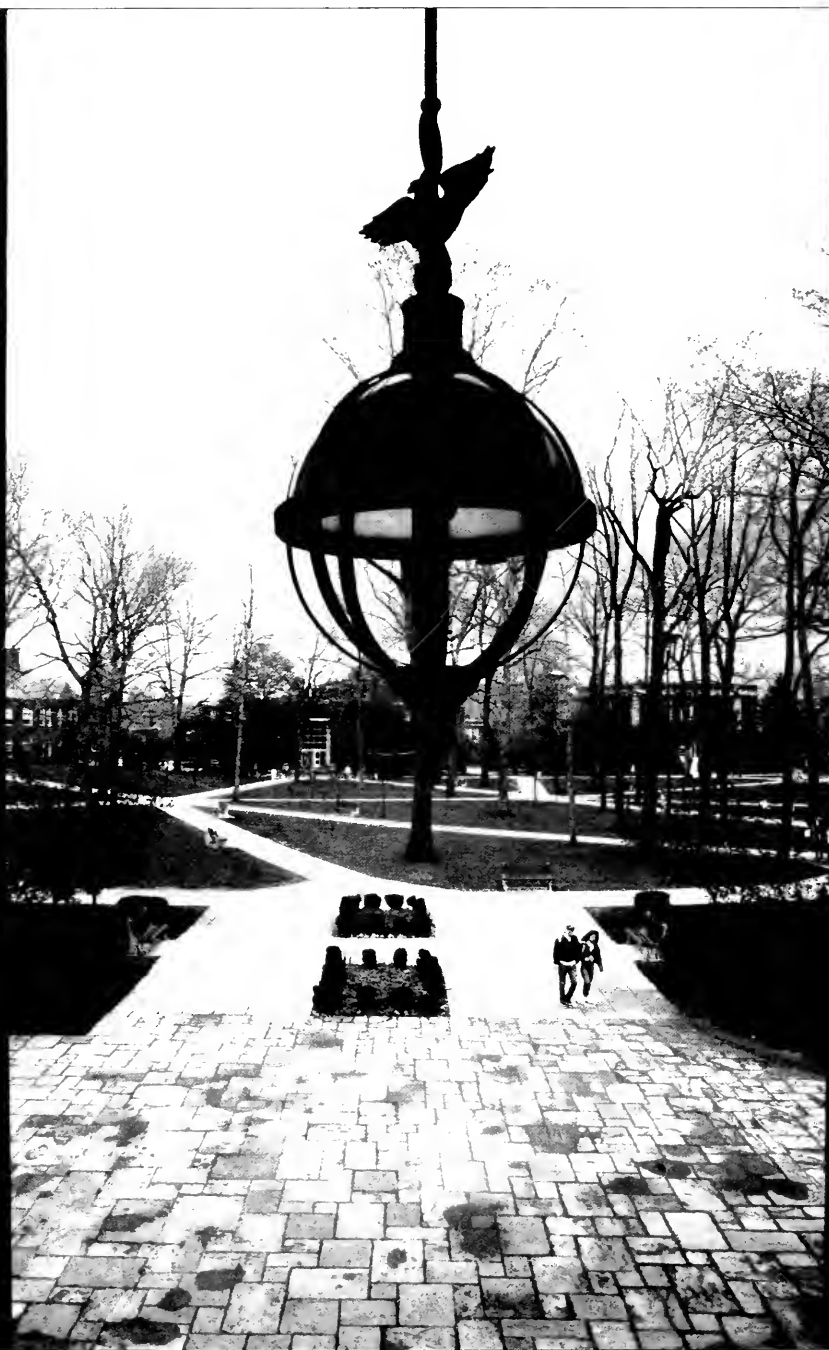
Cancellation of IUP-Sponsored Activities or Events in the Absence of University Closure: Should adverse weather conditions arise or be anticipated that would make it inadvisable to conduct an IUP-sponsored activity or event on a date when the university otherwise remains open, the sponsoring unit/department has the option to cancel or postpone the function. The sponsoring unit/department also assumes responsibility for notifying event participants of the cancellation/postponement in an appropriate and timely manner.

IUP reserves the right to repeal, change, or amend the policies, regulations, and courses contained in this catalog at any time. Tuition and fees are also subject to change.

Press date: January, 1996

Table of Contents

University Calendar	Inside Front Cover
The University	5
Student Programs and Services	9
Admission	13
Finances	15
Registration	21
Master's Degree Programs	22
Doctoral Degree Programs	23
General Policies and Procedures	25
Course Abbreviation Key	30
Graduate Programs and Courses	31
The Eberly College of Business	31
The College of Education	34
Communications Media	34
Counseling, Adult Education, and Student Affairs	34
Educational and School Psychology	36
Professional Studies in Education	38
Special Education and Clinical Services	42
The College of Fine Arts	45
Art	45
Music	46
The College of Health and Human Services	48
Food and Nutrition	48
Health and Physical Education	49
Nursing	50
Safety Sciences	51
The College of Humanities and Social Sciences	52
Criminology	52
English	54
Geography and Regional Planning	58
History	59
Industrial and Labor Relations	59
Political Science	59
Sociology	60
The College of Natural Sciences and Mathematics	62
Biology	62
Chemistry	63
Mathematics	64
Physics	66
Psychology	67
The Graduate School and Research	69
Professional Growth	69
Course Descriptions	70
Graduate School Deadlines	111
Telephone Numbers	112
Board of Governors	113
Trustees	113
Administrative Officers	113
Chairpersons and Graduate Coordinators	114
Index	116



The University

Location

IUP, the largest state-owned university in Pennsylvania's State System of Higher Education, is located in Indiana, Pennsylvania, a community of 28,000 about fifty-five miles northeast of Pittsburgh and thirty miles north of Johnstown. Situated in the Allegheny foothills, Indiana has a moderate climate conducive to study the year round and a wide variety of historical, cultural, and recreational facilities both immediately at hand and in neighboring population centers.

A University Education

As an institution of higher learning, IUP is committed to the preservation, expansion, and transmission of knowledge in all its forms. As a university within the State System of Higher Education, IUP has primary responsibilities of providing high-quality education at a reasonable cost and assessing and responding to the higher educational needs of the commonwealth; as a university, IUP has the responsibility of being concerned with the needs of the nation as a whole and those of the international community at large so far as resources allow.

At the graduate level, IUP is committed to encouraging intellectual excellence, research, and scholarship; to providing in-depth study in each student's special field; and to stimulating continued cultural and intellectual growth for faculty and students.

The general mission of doctoral programs is to encourage the pursuit of knowledge through intellectual inquiry. Doctoral offerings will be primarily professional with emphasis in business, education, public policy studies, human services, social sciences, and applied science and technology, while allowing for distinctive, theoretical programs in the arts and sciences. Doctoral programs should reflect the special role of IUP in the State System of

Higher Education by meeting, in particular, identified state, regional, national, and international needs. IUP is further committed to meeting these needs by offering cooperative programs with other State System institutions. Doctoral programs will be offered in areas of need and when institutional resources allow.



The mission of the master's and specialist/certificate levels is to sustain and develop programs of similarly high quality while, in general, emphasizing more applicable professional skills. Master's and specialist/certificate programs should be based on institutional strengths and should, in addition to other goals, address state and regional needs.

IUP is committed to conducting and disseminating basic and applied research and expects and encourages such scholarly activity in all forms.

IUP provides continuing education for adults through conferences, workshops, short courses, training programs, and degree programs for part-time students. The university will meet the cultural and professional needs of the community through its outreach programs and public service activities.

History of the University

IUP has witnessed a history rich in accomplishment. Since 1875, when it served only 225 students in a single building, it has experienced continuous growth, becoming Pennsylvania's fifth largest university. The current enrollment is over thirteen thousand, with students from thirty-six states and over fifty-five countries.

The first building, named John Sutton Hall in honor of the first president of the Board of Trustees, was opened for students on May 17, 1875.

In April, 1920, control and ownership of the school passed to the Commonwealth of Pennsylvania. In May, 1927, by authority of the General Assembly, the State Normal School became a college, with the right to grant degrees. The name was then changed to the State Teachers College at Indiana, Pennsylvania. In 1959, the legislature approved a change of name to Indiana State College; in the 1960s there followed a rapid growth in the liberal arts program.

In December, 1965, Indiana was redesignated Indiana University of Pennsylvania and given the authority to expand its curriculum and to grant degrees at the master's level. At this time the first doctoral program was initiated.

The following publications have all recognized IUP for its high academic standards and competitive costs:

Arco's Dollarwise Guide to American Colleges; *Barron's 300: Best Buys in College Education*; *The Best Buys in College Education* by Edward Fiske, education editor of the New York Times; *Changing Times: How to Get an Ivy League Education at a State University* by Martin Nemko; *Money* magazine's *Money Guide*; *Two Hundred Most Selective Colleges: The Definitive Guide to America's First-Choice Schools*; and *U.S. News and World Report*.

Graduate Education at IUP

Graduate education was inaugurated at IUP in September, 1957. The university currently offers programs leading to the Master of Arts, Master of Business Administration, Master of Education, Master of Fine Arts, Master of Science, Doctor of Psychology, Doctor of Education, and Doctor of Philosophy degrees. Nondegree programs leading to certification in various teaching and school service fields are also available.

In 1994, the university was granted Doctoral I classification by the Carnegie Foundation for the Advancement of Teaching. This reclassification places IUP in the company of institutions that provide a full range of baccalaureate programs and have a commitment to graduate education through the doctorate degree, awarding at least forty doctoral degrees annually in live or more disciplines.

In all graduate programs the objectives are to (a) encourage excellence and scholarship; (b) provide depth in the student's special field; and (c) stimulate enthusiasm for continued cultural and professional growth on the part of the student.

The Graduate School staff is assisted in its daily functioning by a) the Graduate Committee, a standing committee of the University Senate concerned with graduate program curriculum and policy matters; b) the Graduate Student Assembly, an elected graduate student body representative of all campus academic departments offering graduate programs; and c) the chairpersons and coordinators of departments offering graduate programs.

Accreditation

IUP is accredited by the Middle States Association of Colleges and Secondary Schools, the National Council for Accreditation of Teacher Education, the National Association of Schools of Music for its music curriculum, National League for Nursing for its nursing curriculum, American Psychological Association for its psychology curriculum, the

National Association of School Psychologists for its school psychology curriculum, the Educational Standards Board of the American Speech-Language-Hearing Association for its speech pathology curriculum, and the Accreditation Board for Engineering and Technology for its safety sciences curriculum. The university is a member of the Council of Graduate Schools in the United States and of the Northeast and the Pennsylvania Association of Graduate Schools.

Buildings and Grounds

With the addition in 1995 of 137 acres of undeveloped land from the former Campbell and County farms, the main campus, originally consisting of 12 acres and one building, is now composed of 341 acres on which are located seventy-five major buildings owned by the state and seven athletic fields. Two of the buildings, Breezedale and John Sutton Hall, have been entered in the National Register of Historic Places. The Co-op Recreational Park, located a few miles from the campus, consists of 280 acres and several building including a lodge and ski but. The wooded hillsides offer opportunities for nature study and such outdoor recreational activities as hiking, skiing, and exercise trails.

Library and Media Services

The IUP Libraries consist of the Stapleton/Stabley central facility, Cogswell Music Library, campus libraries in Kittanning and Punxsutawney, and the University School Library. Collectively, the University Libraries contain over 700,000 book volumes, 100,000 bound periodicals, 1.7 million items of microforms, 5,400 periodical subscriptions, 35,000 media holdings, and in excess of 24,000 volumes of government publications. (IUP is a designated Select Depository for federal and state publications.) A wide range of resources and services are available to support teaching and research. The University Libraries are an associate member of the Center for Research Libraries and a member of OCLC. Records of holdings in the IUP

Libraries are accessible through the Voyager online catalog which may be accessed through a modem by telephoning 357-7700 or via the IUP CHIEF (electronic communications) network by entering LIBRARY in response to the question, "Which service would you like?"

Dialogue online searching services are available to faculty and students of IUP. Online searching is supplemented by a number of CD-ROM databases (available within Stapleton Library), which run on a local area network. Located on the first floor of Stapleton Library within proximity to the Reference Desk, databases include Dissertation Abstracts, ERIC, ABI/Inform, MLA, PsychLit, Disclosure, Social Sciences Index, Humanities Index, General Science Index, and the Cumulative Index to Nursing and Allied Health Literature (CINAHL).

Interlibrary Loan services are available. Borrowing from other libraries is often curtailed between Thanksgiving and Christmas.

Stapleton Library has a limited number of shared and individual locked carrels for faculty and graduate students who are working on research requiring library resources. Application for locked study carrels should be made within the first two weeks of each semester at the Circulation Desk. A \$20 key deposit is required.

Stapleton Library is open ninety-three hours per week when classes are in session. Hours are:

Monday-Thursday

7:45 a.m. - 11:45 p.m.

Friday

7:45 a.m. - 6:00 p.m.

Saturday

9:00 a.m. - 5:00 p.m.

Sunday

1:00 p.m. - 11:45 p.m.



Media Services, which produces and duplicates media materials, is located in Stabley 103 and is open 8 a.m. to 4:30 p.m., Monday through Friday. Media Resources (Stabley second floor) and the Information Services (Reference) Desk are open until 10 p.m., Sunday through Thursday and until 6:00 p.m. on Friday and 5:00 p.m. on Saturday. Special Collections and Archives is open 9:00 a.m. through 4:30 p.m., Monday through Friday.

A complete schedule of library hours for the academic year may be obtained from the Stapleton Circulation Desk.

Book loans are made for three-week periods to students and may be renewed. Materials are subject to recall for the use of other borrowers. Periodicals do not circulate outside the building.

Periodicals, newspapers, and microform serials are located on the ground floor of Stapleton. Journals are shelved in closed stacks but are accessible to faculty members and doctoral students.

University Senate

Purpose

The purpose of the University Senate is to provide a formal means through which the student body, faculty, and administration, working as a unified group, shall have a representative share in the governance of the university.

Nothing relating to the organization and administration of the University Senate shall be construed so as to limit the authority of the Council of Trustees or the president of the university with respect to the administration of the university as prescribed by law.

Composition and Elective Procedures

The University Senate shall consist of a number of faculty double the number of departments of the university, an administrative segment one-third the size of the faculty segment, and a student segment one-half the size of the faculty segment. The Senate shall also include one Alumni Association representative and four representatives from staff. Faculty, administrative, and staff members must hold full-time contracts at the time of election or appointment, and students must be full-time and in good standing. "Student" refers to both the undergraduate and graduate student bodies. The student segment shall consist of ten times as many undergraduate students as graduate students, each delegation to be elected by its representative student body. Undergraduate students shall be elected under the auspices of the recognized student association (as defined by Pennsylvania state Act 1982-188) and graduate students through elections arranged by their comparable body. In both cases, the officiating body shall call for and

accept voluntary nominations for election to the Senate. Student members of the University Senate serve on most of the Senate committees.

Computer Center

The Information Systems and Communications Center (ISCC), established in 1963, is located on the ground floor of Stright Hall. The ISCC provides computational support for undergraduate and graduate courses, faculty and student research, and the administrative requirements of the university.

The primary computing capacity of the center is provided by a DEC VAXcluster running VMS which supports both time-sharing and batch processing services. A campus network provides 9600 baud terminal access, with ethernet connectivity available in selected locations. IUP is connected to both the Bitnet and Internet wide area networks.

Student access to computing is provided, for the most part, through the public computing laboratories. The primary public labs are strategically placed around campus to maximize their availability and impact. Several departments maintain computing facilities that are of a focused nature and which are intended to support specific programs.

Through implementation of its strategic computing plan, which is part of the university long-range planning process, the university is committed to providing the level of computing and information technology necessary for a modern institution of higher education. Guidance in this area is provided by both an Academic and an Administrative Computing Advisory Committee. Undergraduate and graduate students are represented on the Academic Computing Advisory Committee.

IUP Centers and Institutes

Centers and institutes serve a variety of functions. Each center/institute is unique in its focus and is created to meet a specifically identified need. Centers provide an opportunity for faculty members to utilize their expertise through consultation, technical assistance, and research-related activities.

Centers/institutes provide excellent opportunities for students to learn, to demonstrate their knowledge and skills, and to become involved in meaningful projects in the community. Centers/institutes strengthen the research and public service missions of the university and, therefore, enhance the quality of education.

Center/Institute	Program Director	Telephone
American Language Institute	Dan Tannacito	357-2402
Biotechnology Institute	John Fox	357-2609
Cardiac Rehabilitation Center	Edward Sloniger	357-4031
Center for Applied Psychology	Richard Magee	357-2446
Center for Economic Education	Arthur Martel	357-4775/2640
	Nicholas Karafas	357-4775/2640
Center for Research in Criminology	Randy Martin	357-2720
Center for Research in Written Communication and Translation	Malcolm Hayward	357-2322
Center for Statistics Education in Pennsylvania at IUP	Victor Drescher	357-3024
Center for Teaching of Reading and Writing in Electronic Environments	Jack Shepler	357-4765
Center for Vocational Personnel Preparation	David Downing	357-6486
Child Study Center	Tom O'Brien	357-4434
Criminal Justice Training Center	Mary Ann Rafoth	357-3785
Highway Safety Center	Gary Welsh	357-4054
Institute for Research and Community Service:	Richard Hornfeck	357-4050
Applied Research Lab	Evelyn Landon	357-2439
Archaeological Services	Todd Koetje	357-4530
	Phillip Neusius	357-2733
	Todd Koetje	357-2733
Census Data Center	Susan Forbes	357-2647
Community Nutrition Services	Susan Dahlheimer	357-4357
Mid-Atlantic Addictions Training Institute	Robert Ackerman	357-4405
Management Services Group	Edward Gondolf	357-4405
Government Contracting Assistance Program	Robert Boldin	357-2179
Small Business Development Center	Ron Moreau	357-7824
Small Business Incubator	Lynn Aul	357-2179
Small Business Institute	Robert Nossen	357-2179
	Stephen Osborne	357-2535
	Tom Falcone	357-2535
Intercollegiate Athletic Institute for Sports Camps	Frank Condino	357-2757
Pennsylvania Center for the Study of Labor Relations	Martin Morand	357-2645
Pennsylvania/OSHA Consultation	Richard Christensen	357-2561
Principal Assessment Center	Robert Millward	357-5593
Spatial Sciences Research Center	Robert Sechrist	357-3994
Speech and Hearing Clinic	Esther Shane	357-2453



Journal Publications

Six scholarly journals are published by the Imprint Board at IUP. They are *Benjamin Mays Monograph Series*, *Competitiveness Review*, *Criminal Justice Policy Review*, *Hispanic Journal*, *Interdisciplinary Studies in the Literature and Environment*, *International Journal of Commerce and Management*, *Studies in the Humanities*, and *Works and Days: Essays in the Socio-Historical Dimensions of Literature and the Arts*.

Foundation for IUP

The Foundation for IUP is a nonprofit corporation established in 1967 to develop and maintain private support for IUP. It is governed by a twenty-four-member Board of Directors. The offices of the foundation are located on campus in John Sutton Hall. Funds raised through contributions from alumni, friends, faculty and staff, corporations, and foundations are used to support scholarships, academic and athletic enrichment, departmental programs, and other priority needs of the university. In December, 1995, the Foundation for IUP successfully concluded a \$20 million capital campaign. The combined endowment resources of the university and the Foundation for IUP total approximately \$12 million.

Student Programs and Services

University Testing Services

IUP is formally recognized as an official testing site by several national testing agencies. These include American College Testing, Educational Testing Service, Psychological Corporation, Law School Admissions Council, and College Board. The Office of Career Services sponsors IUP's University Testing Services as part of its comprehensive mission to place students in appropriate occupations and professional and graduate education programs. The following are of particular interest to potential students.

The Graduate Record Examination (GRE) is administered on nationally established dates five times each year. In the Saturday morning sessions the general examinations (formerly called aptitude examinations) are offered; the advanced examinations (specializations) are offered in the afternoon sessions. Information and registration booklets are available from the Graduate School or from the Office of Career Services. Registration forms must be sent directly to ETS in Princeton, New Jersey.

The Miller Analogies Test (MAT) is administered by University Testing Services monthly. All Graduate School applicants with a GPA below 2.6 must take the MAT.

The Graduate Management Admission Test (GMAT) is administered on four nationally established dates. University Testing Services offers the GMAT on only three dates (October, January, and June of each academic year). Information and registration booklets are available from the M.B.A. coordinator in the College of Business, the Office of Career Services, or the Graduate School.

The National Teacher Examination (NTE) is administered in the fall, spring, and summer. The exam comprises a Core Battery (consisting of three tests) and a Specialty Area test. The instrument is used by a number of states, including

Pennsylvania, for teacher certification. This test is used at IUP for admission to the supervisor of guidance certification program.

Information on graduate and professional school exams other than those used for IUP Graduate School programs is available through the Office of Career Services. *Law School Admission Test (LSAT)* information is also available in the office of the College of Humanities and Social Sciences.

Medical College Admission Test (MCAT) information is available through the dean of the College of Natural Sciences and Mathematics.

Administration of tests adapted to persons with visual, auditory, learning, or physical disabilities can be arranged by contacting the testing company in advance. Information and test registration deadlines are described in each bulletin of information. The test center will make the appropriate accommodations according to instructions from the testing company.

University Testing Services is a center for the administration of tests and neither makes testing requirements nor offers interpretations of testing results. Commercial "How to Prepare for..." materials are available in the Co-op Store and other local bookstores. Questions regarding test requirements and desirable scores should be addressed to the Graduate School. Questions regarding specific registration matters and the test agency information-registration materials may be directed to the Office of Career Services, 302 Pratt Hall, (412) 357-2235.

Career Services

The Office of Career Services, 302 Pratt Hall, is open to all IUP graduate students and alumni. Individuals and classes are encouraged to utilize the resources of professional staff, career-related materials, and physical facilities for ongoing assistance in the process of career planning and successful entry

into meaningful and productive employment.

The primary functions of the program include career planning assistance through voluntary conferences with professional career counselors; cooperating with IUP faculty members to encourage increased awareness of current career planning, job-seeking assistance, and employment trends; arranging campus interviews; and publicizing career-related information. Other functions include receiving and assembling current job vacancies listings which are available on a regular schedule; maintaining a career information library; arranging for the dispersal of occupational information through extensive meetings with representatives from education, business, industry, and government; and conducting frequent statistical studies of graduates to assemble "supply/demand" data.

Credentials Service

The Graduate School and Research offers a limited credentials service for doctoral students who need it. This service establishes, maintains, duplicates and, at the student's request, mails a credential file to prospective employers. Packets for starting credential files are available at the Office of the Associate Dean for Administration, the Graduate School and Research, 125 Stright Hall. Credentials are sent to potential employers at the request of the student. The Graduate School and Research will maintain credential files for graduating students and alumni at their request for a period of three years following graduation. This service must be initiated by the student.

Publications

The Penn, IUP's campus newspaper, is published three times a week during the fall and spring semesters by students wishing to gain practical newspaper experience. Interested students are advised to attend organizational meetings held at the

beginning of each semester.

Student Handbook is distributed to all students, graduate and undergraduate, free of charge. It includes rules and regulations, extracurricular programs, and general information of interest to students.

Thesis/Dissertation Manual is available in the Graduate School to all graduate students and is free of charge. It includes guidelines, deadlines, and forms for students preparing theses or dissertations.

Services for Students with Disabilities

Disability Support Services (a unit of the Advising and Testing Center) is the primary agent for the provision of access for IUP students with physical and learning disabilities. Faculty and staff within the office serve to ensure IUP's program access compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. Students with disabilities are urged to register with the office. Services provided include early registration; assistance in locating accessible housing; equipment loan; test proctoring and reading; note taking; recording of books; NCR paper; liaison with faculty, OVR, and BVS; and general advising and counseling. Further information may be obtained in 106 Pratt Hall or by calling (412) 357-4067 (VITD).

Speech and Hearing Clinic

The Speech and Hearing Clinic, located in Davis Hall, offers diagnosis of speech problems, hearing tests and evaluations, and a regular program of therapy. The clinic also administers the speech clearance for teacher education programs.

These services are made available without charge to students regularly enrolled at the university to give the necessary assistance to alleviate deficiencies which would interfere with successful performance and progress in the university and in future work. Students are encouraged to use the facilities provided for them and may of their own initiative come to the clinic for

help, or they may be referred by any faculty member or university official.

Housing

IUP maintains and operates thirteen traditional residence halls and two apartment buildings, all of which are available to graduate students. In an effort to create a graduate environment, twelve two-person, one-bedroom apartments located on the fifth floor of Campus Towers have been reserved for the graduate population.

Students interested in living in any of IUP's residence facilities should write or call the Office of Housing and Residence Life, G-14 Sutton Hall, IUP, Indiana, PA 15705. (412)357-2696.

A brochure enumerating privately owned apartment complexes located on the perimeter of the campus is available upon request from the Office of Housing and Residence Life to students who prefer to reside off campus.

Dining Services

IUP offers twelve meal plans, eight of which are available to residence hall students. Interested students should write or call the Office of Housing and Residence Life (at the address elsewhere in this section) for details.

Insurance for Personal Belongings

Students are encouraged to carry insurance that covers the loss or theft of valuables while residing in residence hall or apartment housing. Students are encouraged to determine coverage available through their parents' homeowners policy and consider a rider if necessary to provide the appropriate coverage while at the university OR to consider obtaining property insurance through an independent insurance carrier. The university does not assume responsibility for loss to students' belongings.

Refrigerators

Residents can rent refrigerators for their rooms on a one- or two-semester basis. Students benefit directly from this program, since profits are used to upgrade special

facilities and furnishings in the residence halls. Residents can also use their own refrigerators as long as the unit does not draw more than three amps of electrical current and occupy more than 2.4 cubic feet of space.

Post Office

The University Post Office is located on the ground floor of Folger Hall, at the corner of Pratt Drive and Maple Street. All United States and campus mail is picked up and delivered daily to administrative offices and residence halls from this location. As it is a contract station of the Indiana, Pennsylvania, post office, the University Post Office also provides a window service for university personnel for all postal services including box rentals.

Telephone Service

Touch-tone line service is provided for each residence hall room and apartment. Students must, however, provide their own touch-tone telephones.

AT&T College and University services (ACUS) provides long-distance service to residence hall rooms and apartments at a reduced rate from the AT&T standard. Residents are issued Personal Security Codes to gain access to the ACUS system. Each month, individual student bills for toll calls and telegram charges are mailed directly to the student. There is a \$150 credit limit on long-distance calls to assist students in managing their telephone budgets.

The university has contracted with Bell Atlantic for \$4 worth of local calling message units each month. Students who make local calls in excess of the \$4 limit will receive bills from Bell Atlantic for the balance.

Cable Television and Data Lines

IUP has installed a fiberoptic network which makes cable TV available in student rooms and which will lead to active data lines in student rooms. Thirteen residence hall floors were equipped with active data lines for the 1995 fall semester.

Automobiles

Students, faculty, and staff members who park vehicles in campus parking areas must register their vehicles with the Campus Police Office. Resident students will be issued parking permits for the following reasons: medical necessity, student teaching, or other academic need for a vehicle.

A written application must be submitted to and approved by the Parking Authority Review Board. Parking will be available to resident students not meeting the aforementioned criteria for a fee, to park in the Robertshaw lot. The Campus Police Office is located in Sutton Hall and can be contacted for information on parking as well as copies of the current rules and regulations.

Religious Life

The spiritual needs of graduate students can be served by a variety of recognized religious student organizations at IUP. These campus ministries offer opportunities both on campus and in the community for worship, fellowship, theological and denominational studies, retreats, religious dialogues, and personal counseling.

University Health Service

The University Health Service operates an outpatient clinic and provides routine health care to students while classes are in session. The outpatient clinic is staffed with physicians, nurse practitioners, nurses, and educators. It is located at the Pechan Health Center, at the corner of Maple Street and Pratt Drive. For emergency care of students when the Health Center is closed, the Indiana Hospital emergency room is available. The university has a contract to cover the cost of transporting a student to Indiana Hospital for an emergency if the student's health insurance policy does not include coverage of ambulance services.

In addition to primary medical care, including minor surgery, some laboratory tests, allergy injections, and dispensing of medications, the University Health Service offers a self-care cold clinic, evening

contraceptive clinic, and programs in chemical health, health education, wellness, and nutrition counseling. Free transportation to area medical facilities is also available. See Tuition and Fees for health fee information. Call 357-2551 for an appointment or 357-6475 for more information.

Student Health Insurance

The University Health Service offers primary care services to IUP students. Full-time graduate students pay a per-semester student health fee which entitles them to unlimited visits at the Health Center (see Tuition and Fees for health fee information). Minimal fees are charged for medications, laboratory tests, and procedures. The University Health Service does not bill insurance companies for services; however, students receive a copy of a bill for each visit which can be used if the individual chooses to bill his/her insurance company directly. Services available at the Pechan Health Center include gynecology care, laboratory services including blood drawing, minor surgery, allergy clinic, self-care cold clinic, health education, nutrition counseling, and chemical health education and intervention services.

Students are encouraged to purchase their own health insurance. Health insurance not only helps defray some of the additional health care costs, but it also provides total confidentiality to the policyholder. The university does not sponsor a group health insurance program for students. An information booklet is designed to assist individuals in purchasing private health insurance is available upon request from the Administrative Office, Pechan Health Center, IUP, Indiana, PA 15705-1083. Call 357-2551 for an appointment or 357-6475 for more information.

Counseling and Student Development Center

The Counseling and Student Development Center is composed of two parts: counseling services and student development programs.

The counseling services staff is

composed of faculty members who are counseling psychologists and doctoral interns in the psychology department. These professionals facilitate the personal and emotional growth of students by offering confidential counseling and consultation on an individual and small-group basis. Beyond the Health Services fee, additional fees are not charged for counseling services.

Student Development Programs is staffed by one faculty member, the director, and a team of graduate students in the Student Affairs in Higher Education Program. Together they provide the following programs: summer orientation for parents of incoming freshmen, orientation for entering students immediately prior to the beginning of classes, the Six O'clock Series, various research projects regarding student opinions and/or satisfaction, and campuswide leadership training activities.

Guidelines for Student Conduct

IUP is an academic community within the society at large. As a community, it has formulated a code of standards and expectations which the university considers to be consistent with its purpose as an educational institution. IUP reaffirms the principle of students' freedom coupled with an acceptance of full responsibility for one's behavior and the consequences of such behavior. As a member of the academic community and of the larger society, a student retains the rights, protections, guarantees, and responsibilities which are held by all citizens.

The judicial system of IUP exists to review all alleged academic violations as well as violations of university regulations and/or federal, state, and local ordinances. The primary intent of this educational system is to create a positive behavioral change in the students while also protecting the rights of the members of the university community. The system will hold the students accountable for their actions when regulations or statutes have been violated. A

complete statement of regulations is available in the student handbook.

Student Cooperative Association

The Student Cooperative Association has played an extremely broad role in the cocurricular life of the university for more than sixty years. All students, faculty, and staff who pay the Activity Fee are members of the association. Virtually all campuswide activities outside the instructional program are sponsored wholly or in part by the association.

The Activity Fee is the chief source of income for the association's programs. The student's I-Card will admit him/her free of charge or at a reduced fee to university social, cultural, and athletic events. Other income for the association comes from the profits of the Co-op Store and income from events sponsored by the association.

The Student Cooperative Association operates the Hadley Union Building, which houses the Co-op Store, and the Co-op Recreational Park. The Hadley Union Building, built by association members through the Activity Fee, offers many facilities for use by the university community.

The Co-op Recreational Park comprises 270 acres of wooded hillsides and fields. Included are a lodge building which will accommodate groups of up to 200 people, a ski hut and two ski runs, an eighteen-station exercise course, cross-country skiing and biking trails, picnic shelter, archery range, and two softball fields.

Cocurricular Activities and Student Organizations

As participating members of the IUP community, students occupy a responsible role in governance of the campus. Since a valuable part of education lies in participation in groups where experience in leadership, social and community responsibility, intellectual curiosity, and religious interests can be met, participation in varied organizations is available and encouraged.

There are currently more than 180



active student organizations at IUP advised by faculty or staff selected by the students. Students are also encouraged to initiate and support new groups which reflect interests not represented by existing organizations.

Graduate Student Assembly

Each IUP department offering a graduate program is required to establish a graduate studies committee and is urged to, but not required, to form an association for its graduate students. On a universitywide basis, the Graduate Student Assembly (GSA) is the

graduate students' organization. The GSA is composed of two representatives (and frequently an alternate) elected by the full-time and part-time graduate students of the department. It serves graduate students through voting representation on the Senate Graduate Committee and the University Senate, by making recommendations about graduate student affairs to the Graduate Committee and/or the dean of the Graduate School, and by working through other university channels to improve the social, intellectual, and cultural life of graduate students.

Admission

Requirements

1. An applicant must have a bachelor's degree from a regionally accredited college or university.
 2. The applicant's cumulative undergraduate grade point average must be at least a 2.6 if the bachelor's degree was earned within the past five years. If the bachelor's degree is older than five years, the minimum cumulative grade point average required is 2.4. Applicants whose cumulative undergraduate grade point average does not meet minimum standards will be required to submit Miller Analogies Test (MAT) scores.
 3. Graduate Record Examination (GRE) scores or Graduate Management Admission Test (GMAT) scores must be submitted prior to admission as required by individual departments. Please refer to the section "The Graduate Management Admission Test" for further details concerning test scores.
- letters must be from individuals familiar with the applicant's academic abilities (someone who has taught the applicant in a college-level classroom experience). If the applicant has not participated in a classroom experience in the past five years, the recommendations may be from professional sources.
4. A nonrefundable application fee in the amount of \$30 must accompany the application. The application cannot be processed without this fee. Please pay by check (indicating your social security number) and make the check payable to IUP.

Admission Classifications

Applicants for admission to the Graduate School are notified of their admission status by the Dean of the Graduate School prior to the beginning of the term of planned study. Applications must be complete before an admissions decision can be determined. Classifications are as follows:

1. **Precandidacy Status.** Given to an applicant who plans to work toward a graduate degree and whose application materials meet admission requirements as set forth by the Graduate School and the academic department.
2. **Probationary Admission.** With departmental recommendation, applicants not meeting minimum admissions criteria may be granted pre-candidacy status with their first semester of enrollment also being considered a probationary semester. The letter of admission will be a pre-candidacy letter with the additional note indicating that the applicant is being admitted on probation. The note will also include criteria (i.e., course prerequisites) as defined by the academic department that must be fulfilled during the first semester. At the conclusion of the first semester of study, the student's progress will be

reviewed by the department to determine if the student will be permitted to continue graduate studies.

3. **Special Status.** Given to an applicant who does not intend to pursue a graduate degree but only enroll in graduate classes for which he or she is qualified. Although Special Status students may later apply for admission to a degree program, only under exceptional circumstances will courses taken under Special Status be applicable toward the degree.
4. **One Course Only.** It is possible to take one and only one course by registering and paying for it after filing a One Course Only application with the Graduate School. Full application to the Graduate School is not required. One Course Only forms are available from the Graduate School office, Stright 101. Students who use this form to take their first course must apply and be admitted to the Graduate School before taking further courses.
5. **Off-Campus Program Admission.** Admission standards and processes for off-campus programs are the same as for those offered on the IUP campus. The sole exception is that students admitted under the "One Course Only" category may take two courses in their initial semester.
6. **Admission Denied.** Applicants denied admission to the Graduate School will receive a letter from the Dean of the Graduate School indicating the reason for the denial.

Procedures

1. Each applicant must file a completed application form. All application forms are contained in the application packet received from the Graduate School. (The admissions packet sent to Doctor of Psychology and Executive M.B.A. applicants differs somewhat from the regular packet.)
2. The application should be accompanied by two copies of official transcripts from each undergraduate and graduate institution attended, regardless of whether or not a degree was earned. If the degree was earned at IUP, the applicant must submit a request to the Registrar's Office to forward official transcripts to the Graduate School.
3. At least two letters of recommendation are required from each applicant. These

International Student Applicants

In addition to fulfilling the general application procedure, international applicants must present evidence of fluency in English. Applicants whose native language is not English are required to take the Test of English

as a Foreign Language (TOEFL). The Graduate School will not process applications from international applicants until TOEFL scores are on file in the Graduate School. (Students requesting information about the TOEFL should write to TOEFL, Educational Testing Service, Princeton, NJ 08540, U.S.A.)

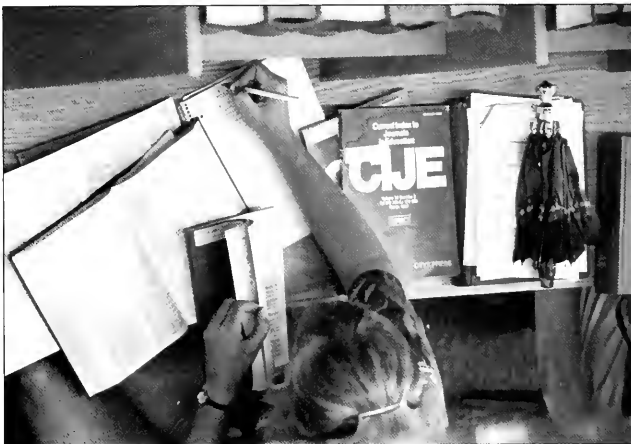
International applicants must also complete a Foreign Student Financial Statement, included in the application packet. The applicant must demonstrate sufficient financial resources to meet the cost of living in the United States; the cost of travel to and from the student's native country; and the cost of graduate education at IUP.

International students must submit official foreign transcripts and official English translations. These documents must bear the official seal of the issuing college or university.

If the international applicant is admitted to the university, the Graduate School will notify the Office of International Services at IUP. The Office of International Services will mail information on housing, arrival dates, and other general information about the university. Questions concerning certificates of eligibility (I-20) and other legal matters should be addressed directly to Office of International Services, 338 Sutton Hall, IUP, Indiana, PA 15705-1081, U.S.A.

Applicants for Specialist, Administrative Certification, and Letter of Eligibility Programs from the Pennsylvania State Department of Education

The IUP College of Education offers state-approved programs leading to specialist and administrative certificate programs in Elementary School Counseling, Elementary School Counseling (Counseling, Adult Education, and Student Affairs Department), School Psychology (Educational and School Psychology Department), Reading Specialist (Professional Studies in Education



Department), and Elementary or Secondary School Principal (Professional Studies in Education). The program for preparation for school superintendency is an integral part of the doctoral program in Administration and Leadership (in the Department of Professional Studies in Education). This doctoral program includes the requirements for a Pennsylvania letter of eligibility to become a school superintendent.

Applicants for these programs should follow the same procedures for admission, programming, and registration as described in this catalog. Interested applicants should check with the department chair or graduate coordinator responsible for the specialized program for information before beginning the admissions process.

Principal Certification

IUP offers a performance-based school principal certification program in elementary and secondary education. Those who wish to pursue this program must first be granted admission to the Graduate School. Before applying, however, interested applicants should consult with the director of the principal's certification program (Dr. Cathy Kaufman, Professional Studies in Education Department, 305 Davis Hall; (421) 357-2400).

Examination Requirements Graduate Record Examination (GRE)

The following departments require the submission of official GRE scores (general test) prior to admission:

- Criminology (Ph.D.)
- Educational Psychology (M.Ed.)
- Food and Nutrition
- Geography
- History
- Political Science
- Psychology (Psy.D.)
- School Psychology (D.Ed.)
- Sociology

In addition to the general test, the Clinical Psychology and School Psychology programs require the Psychology subject test.

Graduate Management Admission Test (GMAT)

Applicants to the Executive M.B.A. or M.B.A. program are required to submit GMAT scores prior to admission.

Miller Analogies Test (MAT)

Applicants with cumulative undergraduate GPAs below the minimum requirements will be required to submit MAT scores of not less than 47.

Specific information about test registration and availability can be obtained from the Office of Career Services, 302 Pratt Hall, (412) 357-2235. Applicants should request that their scores be sent to the Graduate School at IUP.

Finances

Tuition and Fees

Fees for the 1995-96 academic year include the following charges, which are subject to change at any time. A full-time graduate student is one who is carrying at least 9 graduate credits per semester while a part-time graduate student carries 3 credit hours per semester or less. Students must be enrolled in a degree program for at least 5 hours per semester to be considered for financial aid.

Tuition—Fall, 1995 and Spring, 1996

Pa. resident full-time	\$1,612 per semester
Pa. resident part-time	\$ 179 per credit
Non-Pa. resident full-time	\$2,897 per semester
Non-Pa. resident part-time	\$ 322 per credit hour

Tuition—Summer Session (1996)

Pa. resident	\$179 per credit hour
Non-Pa. resident	\$322 per credit hour

Health Fee

Full-time student	\$65.00 per semester
Part-time student	\$32.50 per semester (optional)
Summer Session, 1996	To be announced

The Student Health Fee is waived for students commuting from a distance outside a sixty-mile radius of Indiana, for students having an internship which is more than thirty miles from Indiana, and for students taking fewer than nine credits per semester. The summer session fee is required of all full-time and part-time students. Questions about the residency classification should be directed to the Residency Classification office, G-5 Sutton Hall, (412) 357-2217.

Student Cooperative Activity Fee

Full-time student	\$55.50 per semester
Part-time student	\$23.50 per semester
Summer Session, 1996	To be announced

Exceptions to Activity Fees: Exceptions to this fee structure are available to students who live and hold internships or student teaching assignments outside of a twenty-mile radius of campus and for those who are part-time. Contact the Student Cooperative Association at 412-463-8541 for details.

Educational Services Fee (Mandatory)

Full-time student	\$75.00 per semester
Part-time student	\$35.00 per semester
Summer session	\$35.00 per session

Facilities Fee

Full-time student	\$86.00 per semester
Part-time student	\$40.00 per semester
Summer Session	\$40.00 per session

Application Fee

\$30.00 (nonrefundable)

Late Registration Fee

On Late Registration Day	\$ 50.00
After Late Registration Day	\$100.00

Audit Fee (Same as Tuition)

Graduation Fee

\$ 30.00

Master's or Doctoral Cap, Hood, and Gown Fee

\$ 40.00

Please note: Registration for undergraduate courses is billed at the undergraduate rate.

Special Fees

Damage Fee

Students are responsible for damages, breakage, loss, or delayed return of university property.

Degree Fee

A fee of \$30 will be charged each candidate for a degree at the time of approval of application for graduation. This fee is to cover costs of preparing diplomas and the graduation ceremony.

Transcript Fees

Applications for transcripts must be made only in writing to the registrar, either by U.S. mail or on forms available at the transcript window in Sutton Hall - Ground Floor. Such requests must include:

1. Your full name and Social Security number as of your graduation or termination of enrollment at IUP. (Please note any name changes since graduation.)
2. Your present address.
3. Whether you are requesting a transcript of your undergraduate and/or graduate work.
4. Whether you graduated or, if not, when you were enrolled.
5. The full and clearly stated name(s) and address(es) of person(s) to whom you wish the transcript(s) sent.

The transcript fee is \$3 for each copy requested. (Checks or money orders should be made out to Indiana University of Pennsylvania.) A charge of \$6 will be assessed for express transcript service.

Any requests which are not accompanied by the proper fees or information will be returned to the senders for inclusion of them. No transcript requests will be processed without the payment of transcript fees.

Official transcripts (containing signature and university seal) will not be issued to students directly. The university will attempt to mail official transcripts within a reasonable time.

However, in the event of its failure to do so, damages will be limited to the fee, if any, paid by the student for the copy or copies of the transcript. In no case is the university responsible for consequential damages.

IF ADDITIONAL INFORMATION IS NEEDED *CONCERNING FEES*, PLEASE CONTACT ACCOUNTS RECEIVABLE AT (412) 357-2207.

All fees are subject to change without notice.

Grades and transcripts may be withheld by IUP if a student is delinquent in paying any bill owed to the university. Payment of the bill or establishment of a payment plan satisfactory to the university will be required for release of grades and/or transcripts.

University Refund Policy

The university must engage its faculty, assign residence hall space, and arrange for dining contracts in advance of each term in accordance with the number of students who expressed their intent to be enrolled. When students withdraw from the university, they create vacancies which cannot be filled, and financial commitments for salaries and services by the university must be honored. The refund policy at IUP applies to all students enrolled in credit-producing programs at the university either full-time or part-time and was effective January 1, 1993. Any student canceling or withdrawing from his/her first semester/session should refer to Section IIC.

I. Cancellation

Students who have made prepayments to the university, who are unable to attend classes, and who notify IUP prior to University Check-in or earlier are entitled to a full refund of all fees paid. **LESS APPLICABLE ADVANCE DEPOSITS.** To be eligible for such a refund, the student must notify the director of Accounts Receivable in writing *prior to University Check-in*. The director of Accounts Receivable will forward to the registrar copies of the cancellation notices, and the registrar will cancel the

student's registration and notify the appropriate university offices. Students who use university residence halls and/or dining services the week prior to the start of classes and who cancel will forfeit an amount equal to one week's fee for such services plus the full amount of any advance deposit payment.

II. Total Withdrawal from the University

- A. Graduate students withdrawing from the university must process such withdrawal through the Graduate School Office. The official withdrawal date will be established by the Graduate School. Advance deposit payments toward tuition shall be nonrefundable.
- B. Students totally withdrawing from courses, except for those attending their first semester/session at IUP, upon receiving approval from the Graduate School, will forfeit a portion of the semester charges in accordance with the following schedule. A student attending his/her first semester/session will be entitled to a reduction of charges as outlined in section IIC.

Withdrawal on Calendar Day Basis	Percentage of Student's Charges to be Forfeited
University Check-in through 14 days	20%
15 through 21 days	30%
22 through 28 days	40%
29 through 35 days	50%
36 or beyond	100%

The start of calendar days is defined as the first day of classes as scheduled on the university calendar.

Refunds for students receiving financial assistance from scholarships, loans, and/or grants will be returned to the source of aid in accordance with the provisions prescribed by the funding source.

C. First Semester/Session Students

First semester/session students who cancel prior to University Check-in are entitled to 100 percent of fees paid **LESS THE APPLICABLE ADVANCE DEPOSIT.**

Students withdrawing during their first semester/session, upon receiving approval from the Graduate School, will forfeit a portion of the semester charges in accordance with the following schedule:

Time of Withdrawal	Percentage of Student's Total Semester Charges to be Forfeited
First Week	7%
Second Week	13%
Third Week	20%
Fourth Week	27%
Fifth Week	33%
Sixth Week	40%
Seventh Week	47%
Eighth Week	53%
Ninth Week	60%
Tenth Week and Beyond	100%

Students will be charged a full week of fees for any partial week of enrollment. Advance deposit payments shall not be refundable.

Students withdrawing during summer sessions will forfeit a portion of the session charges in accordance with the following schedule:

Time of Withdrawal	Percentage of Student's Total Semester Charges to be Forfeited
First Week	20%
Second Week	40%
Third Week	60%
Fourth Week and Beyond	100%

- D. During summer sessions, returning students totally withdrawing from the university, upon receiving approval from the Graduate School, will forfeit a portion of the total session charges in accordance with the following schedule:

Calendar Day of Withdrawal	Percentage of Student's Total Session Charges to be Forfeited
First class day through fourth calendar day	50%
Fifth calendar day and beyond	100%

- E. The associate provost will determine the official start of classes for each semester or session. Refunds to students enrolled in credit-bearing summer conferences, institutes, workshops, or tours of less than five weeks' duration will be granted a 50-percent refund through the first day of the class (unless a no-refund policy is required by the sponsor).

Students who register for classes and then withdraw from the university on or after University Check-in are subject to the following:

III. Individual Course Withdrawal

A graduate student may cancel an individual course(s) up to University Check-in by notifying the *registrar* in writing. If a student cancels a course(s) prior to University Check-in, no penalty will be charged and the student will receive a 100-percent reduction of charges for the course(s) canceled. No reduction of charges will be made to full-time students who withdraw from individual courses after University Check-in. Individual course withdrawal is defined as a reduction in class load but not total withdrawal from the university. Example: A student who registers for three courses and then withdraws from one or two courses.

Part-time students (those with less than nine credits) will forfeit a portion of the credit-hour fee in accordance with the following schedule:

Calendar Day of Individual Course Withdrawal	Percentage of Student's Instructional Fee to be Forfeited
University Check-in through 35 days	50%
36 days and beyond	100%

Reduction of charges will be granted only for instructional fees. No reduction will be granted to students who drop and add a like number of credit hours.

Part-time students attending graduate courses at off-campus locations should refer to the Accounts Receivable Office for further information.

IV. Termination of Residence Hall or Dining Service Contracts

A. Academic Year (Fall and Spring Semester)

1. Residence Hall

Termination—Release from a residence hall contract is not granted except under those conditions outlined in the contract. Any student who meets the conditions for release and submits a written request for release to the Office of Housing and Residence Life through University Check-in will be assessed no forfeiture and will receive 100-percent reduction of the room fee, less applicable advance deposits. Requests received after University Check-in will result in forfeiture of one week's room fee for each week, or portion thereof, the student is assigned to a residence hall. A week's rental charge is determined by dividing the semester room fee by the number of weeks in the semester. The specific date of release will be determined by the Office of Housing and Residence Life.

2. Dining Service

Termination—Any student who is released from his/her Dining Service Contract by the Office of Housing and Residence Life through University Check-in will be assessed no forfeiture, and the student will receive a 100 percent reduction of charges of the dining fee, less applicable advance deposit. Any student who requests in writing to terminate his/her University Dining Service Contract after University Check-in and is granted a contract release from the Office of Housing and Residence Life will forfeit a portion of the semester charges in accordance with the following schedule:

Date of Termination from Food Service Contract	Percentage of Semester fee to be Forfeited
University Check-in through 35th calendar day	50%
36th calendar day and beyond	100%

B. Summer Sessions

Once a student applies for and receives a housing and/or food service assignment, he or she must request in writing and obtain a release from that assignment from the Office of Housing and Residence Life in order to be eligible for a reduction of charges in accordance with the following schedule:

Date of Termination from Halls and/or Food Service	Percentage of Session Charges to be Forfeited
Check-in date* through fourth calendar day of classes	50%
Fifth calendar day and beyond	100%

*The Office of Housing and Residence Life will publish the date students are to check into the residence halls for each summer session. The check-in date is the effective date of the student's contract.

V. Other Provisions

No reduction of charges will be granted unless a formal withdrawal procedure has been initiated through the Graduate School by the student at the point of withdrawal. Written and dated notice is required by the student or the student's family, in special circumstances such as sickness, within thirty days of the student's withdrawal. In order to receive a reduction of charges for individual course withdrawal, documentation must be submitted to the Accounts Receivable Office prior to the close of the semester or session in which the course was offered.

Withdrawal and Refund Policy for Off-Campus Graduate Programs

Part-time students taking graduate courses supported by the School of Continuing Education at off-campus locations must request refunds on an official Request for Refund form. The form may be obtained from the instructor or by calling the director of Off-Campus Studies, School of Continuing Education, at (412)357-2227. The official withdrawal date will be established by the School of Continuing Education.

Individual Course Withdrawal for Part-Time Students

Part-time students who reduce their course credit load will receive a 50-percent refund from the date of University Check-in through the fifth week of the course. After the expiration of the fifth week, no refund will be granted for reduction of class load.

Other Refund Policy Provisions

No refunds will be granted to students who are suspended or expelled from classes, residence halls, and/or dining service.

The Graduate School may request exceptions to these policies when circumstances justify it (e.g., death or medical reasons).

Students who are military reservists or members of the National Guard and are ordered to active military service by the President of the United States will receive a full reduction of charges for tuition. Other fees will be prorated.

The Accounts Receivable Office, Administrative Annex, is responsible for implementing the refund policy. Students who wish to appeal a decision rendered by Accounts Receivable may do so through the treasurer to the vice president for Finance.

Discrete Course Withdrawal
During the fall and spring semesters, graduate students may ask to withdraw from a graduate course without prejudice and with the grade of "W" by petitioning the dean of the Graduate School within the first two-thirds of the semester as determined by the published university calendar. The request must first be endorsed by the course instructor and the student's department chair or graduate studies coordinator, in that order. Graduate students wishing to withdraw from an undergraduate course within the prescribed period must do so by processing the standard Discrete Course Withdrawal form.

For summer classes and labs, withdrawals must be processed within the first six days for each of the summer sessions.

Following the close of the established six weeks (or sixth or twelfth day) withdrawal period, graduate students may withdraw from a course, either graduate or undergraduate, without grade penalty only with the written approval of their department chair or graduate studies coordinator and the dean of the Graduate School (in that order) for such reasons as accident, severe illness, or extreme personal disturbance. A student dropping a course under any other circumstances will automatically receive an "F" at the end of the semester or summer term.

Financial Aid

The Financial Aid Office, located at 308 Pratt Hall, offers financial information and counseling to all students attending IUP. The types of financial assistance offered by the Financial Aid Office include student employment, loans, and scholarships. In most cases the Free Application for Federal Student Aid (FAFSA) is used to determine eligibility for these programs.

In order to be considered for financial aid administered through the university, a FAFSA must be submitted. The preferred filing deadline is May 1 of each year. Students attending IUP on at least a half-time basis (5 credit hours or more) will be awarded assistance based on demonstrated financial need. To be eligible for continued funding, applicants must remain in satisfactory academic standing at the university and show continued academic progress.

The cost of attending IUP and the university's refund policy are listed in this catalog.

Assistantships

IUP offers both half-time assistantships (twenty hours per week of assistantship service) and quarter-time assistantships (ten hours per week of assistantship service) to full-time graduate students. Half-time assistantships currently pay a stipend of \$4,740 to \$6,330 for two semesters and a waiver of tuition for graduate coursework taken between the beginning and ending dates of the agreement. Duties will vary somewhat from assistant to assistant and may include supervised teaching, research or assistance with research, and university service activities. Duties are under the supervision of a faculty member or administrator. Assistantships are looked upon as an encouragement or reward for academic excellence rather than as a means to relieve financial need.

Half-time assistantships carry a full tuition waiver for the two semesters of the assistantship and the following summer. With some exceptions, quarter-time assistantships carry one-half tuition waiver for the two

semesters of the assistantship and a six semester-hour waiver for the following summer.

Since stipends for assistantships may be raised from year to year, potential applicants should check with the Graduate School for current stipend levels.

The deadline for applying for a fall assistantship is March 15 of the same calendar year. Applications and further information are available at the office of the assistant dean of the Graduate School.

Graduate Scholars Program

The Graduate Scholars Program at IUP is a resource committed to the education of graduate students of minority heritage. The Graduate Scholars Program provides financial aid in the form of graduate assistantships. The terms of the graduate assistantships are as follows: (1) an academic year stipend of \$4,410 to \$6,000, depending on the department and level of study; (2) tuition waiver during the academic year; and (3) tuition waiver for both sessions the following summer.

Graduate assistants work twenty hours per week during the academic year but have no work assignments during the summer. Assistantship assignments are in academic departments or other academic units and are designed to be a valuable part of students' educations.

All American citizens of racial minority heritage (African American, Hispanic, Asian American, American Indian) are invited to apply for entrance to the Graduate Scholars Program. A minimum cumulative undergraduate grade point average of 2.6 "B-" is required; 3.0 "B" is preferred. An undergraduate degree from an accredited institution must be completed prior to the beginning of graduate work at IUP. Prospective Graduate Scholars should write for an admissions packet to The Graduate Scholars Program, the Graduate School and Research, IUP, Indiana, PA 15705-1081.

Teaching Associates

Each year, the Graduate School offers a limited number of teaching

associate positions to qualified doctoral students. Usually an associate teaches six credit hours of undergraduate courses, but other teaching-related service is sometimes assigned in lieu of teaching. These positions carry a stipend and require the associate to be enrolled for graduate credit during each semester of the appointment. During the summer following the appointment, a tuition waiver of up to nine hours of graduate credits is awarded. Activity and health fees, as well as tuition during the fall and spring semesters, must be paid by the associate.

Minimum requirements: Associates must hold a master's degree or have completed 36 graduate semester hours prior to the appointment and must be enrolled in an IUP doctoral program and remain in good standing during the term of the appointment. Departments may have additional requirements.

For further information, contact the director of Doctoral Studies in the department offering your doctoral program.

Fellowship and Scholarship Information

Julius Fileik Doctoral Fellowship

This fellowship was made possible by an endowment established by Shirley Ullom Fileik and her family in memory of her husband, Julius, a member of the Class of 1953. The fellowship provides students with a financial award of \$5,000 and should be combined with either a half-time graduate assistantship or a teaching associate position.

IUP Foundation Fellowships

Foundation Fellowships are awarded to students who have demonstrated merit and the potential for academic excellence in their doctoral studies. These fellowships provide students with a financial award of \$5,000 and should be combined with either a half-time graduate assistantship or a teaching associate position.

To be considered for either fellowship, the student must be nominated by his or her academic department. In addition to a completed admissions application, the nominee must provide the

Graduate School with a one-page prospectus of the research or clinical interests he or she intends to pursue in a doctoral program and a one-page statement of his or her qualifications for the award. All fellowship nominees must be admitted to a doctoral program and must have received either a graduate assistantship or teaching associate position. Awards will be announced by June 1. For further information, please contact the Assistant Dean, the Graduate School and Research, 124 Stright Hall, IUP, Indiana, PA 15705.

Margaret Flegal Harte Scholarships

Two \$450 scholarships are awarded yearly to needy new full-time graduate students. All new Graduate School applicants except for those who receive other IUP scholarships are considered for the Margaret Flegal Harte Scholarships based on academic records and financial need. No application forms for the scholarships are required; the Free Application for Federal Student Aid (FAFSA) serves as the document for needs assessment. A FAFSA may be obtained from the Financial Aid Office. Interested students may contact the Assistant Dean, the Graduate School and Research, 124 Stright Hall, IUP, Indiana, PA 15705.

Graduate Merit Scholarships

Funding for this scholarship is made possible by the IUP Council of Trustees' Unrestricted Endowment Fund. The scholarship offers \$500 awards to a small number of students who are entering a graduate program (master's or doctoral) for the first time. Merit scholars must have a strong academic background and must have been granted an assistantship. To be considered for either fellowship, eligible students must be nominated by their academic department. For further information, please contact the Assistant Dean, the Graduate School and Research, 124 Stright Hall, IUP, Indiana, PA 15705.

Employment Programs

Federal College Work Study Program (FCWSP) —The Federal College Work Study Program provides an opportunity for graduate

students enrolled in a degree-granting program of study to earn money to help finance educational expenses. Students may be employed on campus for up to twenty hours per week when classes are in session and forty hours per week during vacation periods. Federal College Work Study jobs not only help to defray the cost of education but can add valuable practical experience accompanying the student's graduate education. Eligibility is based on financial need as determined by the Free Application for Federal Student Aid (FAFSA). The FAFSA is available in the Financial Aid Office along with the institutional application for Federal College Work Study.

University Employment (UE)—The University Employment Program provides an opportunity for graduate students to work as an accompaniment to their studies program. Maximum UE hours are twenty hours per week when classes are in session and forty hours per week during vacation periods. No application is necessary. This employment program is not based on financial need.

Special Funded Grant Employment
Grant employment opportunities are also available to graduate students from time to time. Interested students should check with the Assistant Dean, the Graduate School and Research, 124 Stright Hall, IUP, Indiana. PA 15705.

Student Loan Programs

Federal Family Education Loan Programs—The Federal Family Education Loan programs offer a number of different loan options for graduate students. These include the Federal Stafford Loan (both subsidized and unsubsidized) and the Federal Supplemental Loan for Students (SLS). In order to apply for any of these Federal Family Education Loan programs, you must complete a Free Application for Federal Student Aid (FAFSA) and an Application/Promissory Note for Federal Stafford Loans and Federal Supplemental Loans for Students.

The FAFSA is available in the Financial Aid Office. The Federal Stafford/SLS Application and Promissory Note can be obtained from lending institutions such as banks and credit unions.

In order to receive a student loan, you must be enrolled on at least a half-time basis (at least five credits per semester) and be enrolled in a degree or certificate program. Loans are disbursed in two equal installments and are made copayable to the student and IUP. You must attend a Stafford/SLS Entrance Interview before receiving your loan check. University Check-in is the earliest date that you may receive a refund of student loan proceeds.



Federal Stafford Loan

The Federal Stafford Loan provides the potential for graduate students to borrow up to \$18,500 per academic year. At least \$10,000 of this amount must be in unsubsidized funds on which interest must be paid during the in-school and grace period. Principal and interest on a subsidized Federal Stafford Loan are deferred while the student is enrolled on at least a half-time basis and during a six-month grace period. Eligibility for the interest subsidy is based upon financial need as determined by the FAFSA. Interest is at a variable rate not to exceed 8.25 percent.

Repayment of principal and interest on a subsidized loan begins six months after you cease half-time enrollment. You must pay the

interest during the in-school and grace period on an unsubsidized loan according to a schedule set by your lender. Principal payments begin six months after you cease half-time enrollment. There are some deferment options available after you leave school.

Private, Nonprofit Loans

There are a number of privately funded loan programs which provide funds to creditworthy students. Although the interest rates and terms are not as generous as the Federal Stafford Loan, some students may be interested in this type of borrowing opportunity. Additional information is available in the Financial Aid Office.

Veterans

IUP is approved to offer training under the various G.I. Bills. Students who are entitled to training under one of these bills should contact the veterans counselor immediately after being accepted for admission to IUP in order to secure additional instructions. This

procedure is necessary so veterans may be included on the monthly payrolls. The Office of the Veterans Counselor is in 302 Pratt Hall, (412) 357-3009.

Further Information

For further information on financial aid, please contact:

The Graduate School and Research

Indiana University of Pennsylvania
101 Stright Hall
Indiana, Pennsylvania 15705-1081
(412) 357-2222

Financial Aid Office

Indiana University of Pennsylvania
308 Pratt Hall
Indiana, Pennsylvania 15705-1093
(412) 357-2218

Registration

Advisement

After a student has been admitted to the Graduate School, he/she should consult the department chairperson or coordinator of graduate studies in his/her intended field of study about a program of courses. If the student is a special graduate student, consultation should be with the director of Graduate School Academic and Administrative Services. Many departments feel strongly that their students should be advised well before registration for each semester or summer term; these departments are identified each term in the schedule of graduate course offerings. Students are responsible for knowing their department's scheduling advisement rules.

Telephone Registration (TELREG) and Terminal Registration (TERMREG)

To facilitate graduate student registration in classes, the Graduate School offers telephone registration (TELREG) and terminal registration (TERMREG). TELREG and TERMREG are available to all graduate students admitted to the Graduate School who enrolled in at least one class during the preceding two years. TELREG gives graduate students the opportunity to register for classes without attending an on-campus registration; it also provides the advantage of securing a schedule of classes before students who use either the mail or walk-in registration procedures. Details on TELREG and TERMREG are provided in each semester schedule mailed in the preceding semester.

Billing

After students have registered through TELREG and TERMREG, they will receive from the Accounts Receivable Office a bill for tuition and fees. Students registering at final or "walk-in" registration may also arrange for housing, meals, parking, and "I" cards at that time. Telephone- and terminal-registered students should make such



arrangements independently with the offices involved.

Walk-In Registration

"Walk-in" registration is for students who have not preregistered by telephone and is held shortly before the start of classes. Check the graduate class schedule or call the Graduate School at (412)357-2222 for the time and date.

Continuous Registration

For all doctoral students admitted or commencing course work during the Fall, 1990, semester and thereafter, the following policy is binding. Following the completion of all course requirements and the comprehensive examinations, doctoral students must enroll for at least one graduate credit of dissertation or extended dissertation each fall semester annually through the defense of the dissertation.

Schedule Adjustment and Drop/Add Policy

During graduate TELREG/TERMREG, students have the

opportunity to make adjustments to their schedules any time after the original registration date. Also on the evening of graduate walk-in registration, preregistered graduate students have the opportunity to make adjustments to their schedule. Please consult course schedules for appropriate dates and times.

At the beginning of each semester, a few days are set aside for dropping and adding courses. The Drop/Add period was established to permit enrolled students to make schedule adjustments, not to allow unregistered students to build schedules. Students using the Drop/Add period for anything other than schedule adjustments will be charged a late registration fee. Drop/Add dates are set at the beginning of each semester, and students should check with their departments to learn the dates, times, and procedures for dropping and adding courses.

Master's Degree Programs

The Graduate School offers Master of Arts and Master of Science degrees in most academic fields plus the professional degrees Master of Business Administration, Master of Education, and Master of Fine Arts. (See below for specific degree fields.) All students working toward a master's degree must satisfy the Graduate School policies set forth in this catalog and any additional special program requirements imposed by a department.

Under certain circumstances, a specific Graduate School requirement for the master's degree may be satisfied by means of substitution. In no case are requirements waived. Requests for substitutions must be made by petition to the Dean of the Graduate School after approval by the student's department.

Master of Arts degrees are offered in the following:

- Adult/Community Education
- Art
- Chemistry
- Counseling Services
- Criminology
- English:
 - Generalist
 - Literature
 - Teaching English
 - TESOL
- Geography
- History
- Industrial and Labor Relations
- Music
- Physics
- Public Affairs
- Sociology
- Student Affairs in Higher Education

Master of Science degrees are offered in

- Applied Mathematics
- Biology
- Chemistry
- Food and Nutrition
- Geography
- Nursing
- Physics
- Safety Sciences
- Speech-Language Pathology
- Sport Sciences

A Master of Business Administration degree (M.B.A.) and a Master of Fine

Arts degree (M.F.A.) are also offered.

Master of Education degrees are offered in the following:

- Business
- Early Childhood Education
- Education of Exceptional Persons
- Educational Psychology
- Elementary Education
- Elementary or Secondary School Counseling
- Elementary and Middle School Mathematics Education
- Mathematics
- Reading

Transfer Credits

Up to six credits of graduate work taken at another institution may, with approval, be incorporated as part of the graduate student's program at IUP. These courses must have been completed at a regionally accredited institution, and the grade earned must be a "B" or its equivalent or better. The time limitation rule for IUP degrees (cited later in this catalog) pertains without modification to transfer credits.

To request the transfer of credits, the student should provide the Graduate School with a written request indicating the courses to be considered. Included with the request should be a catalog course description or course syllabus and an official transcript showing the earned credits. To be considered official, the transcript must arrive in a sealed envelope bearing the official seal of the issuing institution. The request is reviewed in the Graduate School and the academic department. After a decision is rendered, the Registrar's Office and the student are notified of the transfer decision.

Students wishing to transfer credits from another institution while enrolled at IUP should receive advance written authorization for credit acceptance from the Graduate School and the academic department.

If transfer credits are approved, only the credit, not the grade or accompanying quality points, will appear on the student's IUP transcript.

Transfer credits are not posted

necessarily to the student's IUP graduate record until the student has been admitted to degree candidacy.

Degree Candidacy

Students are reviewed for degree candidacy the semester following the completion of 12 hours of graduate credits (some departments require more than twelve credits for candidacy). Students must be enrolled in course work to be considered for candidacy status. To be admitted to candidacy, students must have achieved an average of 3.0 or higher in all graduate course work and must have met all program requirements to the satisfaction of the department.

Students who are not granted candidacy after completing twelve graduate credits must satisfy all candidacy requirements during the next semester. At the end of this additional term, students will be granted candidacy or may be asked to leave the master's degree program.

Students with especially strong credentials may be granted candidacy upon admission to the Graduate School if recommended by the academic department and if their files are complete in every respect.

Residency

Master's degree candidates have no formal residency requirements, but all credits applied toward the degree (except a possible transfer of six credits) must be taken through IUP. In addition, all candidates must complete their program's final six credits of graduate work in courses offered by IUP.

Graduation

Early in their final semester or summer session, students must file an application for graduation. Forms are available in the Graduate School and in the academic departments. Applications must be filed by the deadlines shown on the Graduate School Calendar (found in this catalog). If all requirements have been met, the degree will be awarded at the next established diploma-award date.

Doctoral Degree Programs

The Graduate School offers work leading to the doctorate through the following departments: Criminology, Educational and School Psychology (School Psychology), Professional Studies in Education (Elementary Education, Administration and Leadership Studies), English (Literature and Criticism, Rhetoric and Linguistics), and Psychology (Clinical Psychology).

Applicants should keep in mind that the doctorate is conferred for distinguished achievement in a particular field of scholarship and for demonstrated ability to perform independent research and/or professional practice in an area of that field. No specific number of course credits entitles a student to the degree.

Those interested in any of the doctoral programs should read the descriptions provided by sponsoring departments later in this catalog. Deadlines for submitting applications and supporting documents vary from program to program, as do degree requirements. Therefore, it is important for students to check with the sponsoring department at the very start of the application process.

The following doctorates are offered:

- Doctor of Education in
Administration and
Leadership Studies
- Doctor of Psychology in Clinical
Psychology
- Doctor of Philosophy in
Criminology
- Doctor of Education in
Elementary Education
- Doctor of Philosophy in English
- Doctor of Education in School
Psychology

The doctoral program in elementary education maintains cooperative arrangements with other universities in the State System of Higher Education, whereby some part of the requirements may be fulfilled at these schools.

Requirements for the Doctoral Degree

Students seeking a doctoral degree must satisfy the minimum Graduate School requirements described below. Sponsoring departments may have additional requirements which are equally binding.

Under certain circumstances, Graduate School requirements for the doctoral degree may be satisfied by means of substitution. Requests for the acceptance of substitutions should be made in the form of a petition to the dean of the Graduate School, after first obtaining the approval of the student's department.

Credit Requirement

A minimum of sixty graduate semester credits, exclusive of dissertation credits, must be earned beyond the bachelor's degree for any of the doctorates offered at IUP.

Residency Requirements

Doctoral candidates will find that residency requirements vary from doctoral program to doctoral program. Doctoral students should check with their departments to learn which of the following residency options apply to their specific doctoral program: completion of a minimum of nine graduate credits at IUP in each of at least two consecutive semesters; completion of a minimum of nine graduate credits at IUP for at least one semester immediately preceding or following a summer of nine-hour study; completion at IUP of at least nine graduate credits in each of two consecutive summers plus six graduate credits during the intervening academic year; or completion of twelve graduate credits at IUP in each of two consecutive summers.

Transfer Credit

Transfer credit is limited to the credit equivalent of a recognized master's degree, except in those special cases recommended by the student's department and approved by the

Dean of the Graduate School, and up to twelve graduate credits through approved interinstitutional agreements.

In order to have credits considered for transfer purposes, the student should provide the Graduate School with a catalog course description/course syllabus of the course(s), an official transcript showing the earned credits, and a letter requesting the course(s) to be transferred as either program elective credits or as program requirements.

Degree Candidacy

Each student admitted to a doctoral program must receive doctoral degree candidacy after completing at IUP no less than nine nor more than fifteen graduate credits beyond the master's degree (some departments have additional requirements for candidacy; consult the program's coordinator). The student must have a minimum quality point average of 3.0. The student's minimum grade point average may be set higher than the foregoing Graduate School requirement by the program's sponsoring department, but in no case may it be lower.

Candidacy Examination

In departments which require it, the candidacy examination is administered by the department in the student's field of specialization. The examination may be written, oral, or both, as determined by the sponsoring department, and may also serve as the final examination for the master's degree if a department so prescribes. The examination may not be taken until the student has completed at least one year of study beyond the bachelor's degree.

Comprehensive Examination

This examination is given, usually upon the candidate's completion of course work, to determine the student's progress in the degree field and fields related to it and the student's likelihood of success in his or her research-dissertation phase.

The examination may be written, oral, or both and is not necessarily limited to areas in which the candidate has taken course work.

Reexamination

A student who fails the candidacy examination, or any part of the comprehensive examination, or any of the examinations in foreign languages and/or computer language, may request reexamination not earlier than one semester following the time of failure, nor later than one year after that date. No student is permitted a third examination without a recommendation to that effect from the degree program's sponsoring department and the approval of the Senate Graduate Committee. Exceptions to this policy for programs can be made only with the approval of the Senate Graduate Committee.

Foreign Language/Research Tool Options

Foreign language and/or research tool requirements for doctoral degrees vary from program to program. In most cases, programs offer options for meeting these requirements. Students should consult with the department sponsoring the degree for specific information and guidance on meeting these requirements.

Dissertation

A dissertation is required of all doctoral candidates and must demonstrate the candidate's mastery of his/her research and reflect the results of an original investigation in the principal field of study. The goal should be to make a definite original contribution to knowledge in the field.

Dissertation Committee

The dissertation committee may supervise several aspects of the student's degree program from the point at which he/she is admitted to doctoral degree candidacy through defense of the dissertation. Students must consult with the sponsoring department to determine which supervisory roles apply. The committee may approve the student's plan of study; arrange for the

candidacy examination; arrange for the comprehensive examination; and oversee the candidate's general supervision related to research, the dissertation, and the general meeting of degree requirements.

Research Proposal

After the candidate has passed the comprehensive examination and has done extensive preliminary proposal research, he/she must present and defend a research proposal before the dissertation committee and the academic community. A copy of the proposal must be placed in the hands of all committee members at least two weeks in advance of the scheduled meeting. The proposal must be found satisfactory by all members of the committee before the candidate may proceed with the dissertation. The *Thesis/Dissertation Manual* outlines this procedure and is available from the Graduate School.

Continuous Registration

For all doctoral students admitted or commencing course work during the Fall, 1990, semester and thereafter, the following policy is binding. Following the completion of all course requirements and the comprehensive examinations, doctoral students must enroll for at least one graduate credit of dissertation or extended dissertation each fall semester annually through the defense of the dissertation.

Dissertation Process

Upon acceptance of the dissertation by the candidate's adviser, the candidate must follow procedures acceptable to his/her department and dean in providing copies for review by the dissertation committee, college dean, and graduate coordinator. The candidate shall then request a formal meeting of the dissertation committee, at a time convenient to all members, to secure dissertation approval. The dissertation must be approved in writing by each member of the committee, as well as the Graduate School's associate dean for research.

Publication of the Dissertation

Following approval of the dissertation by the committee, three copies of the dissertation and two copies of an abstract must be submitted to the Graduate School's associate dean for research. The program's sponsoring department may also require a copy for its archives. The dissertation must be microfilmed according to the plan provided by University Microfilm, Ann Arbor, Michigan. Guidelines are provided in the *Thesis/Dissertation Manual* which is available from the Graduate School.

Application for Graduation

Formal application for graduation must be filed in the Graduate School on or before the published date in the back of this catalog. Deadline dates are also available in the *Thesis/Dissertation Manual*, as well as in each semester's schedule of classes.

General Policies and Procedures

Graduate students are expected to assume full responsibility for knowing graduate program procedures and regulations. General Graduate School requirements are set forth in this catalog; a description of special departmental degree requirements is available in each department sponsoring the specific degree or certification program. Requests for exceptions to policy are given consideration when unique circumstances exist; questions concerning the proper routing of such requests should be addressed to the Dean of the Graduate School.

Academic Credits and Student Status

Although many graduate students work part-time or full-time, such work must not interfere with academic achievement. Graduate education at IUP is offered only to students in a position to benefit from it, and students are expected to maintain a sensible balance between graduate program commitments and outside commitments.

Students may schedule full-time academic loads in most graduate programs. Full-time graduate student status is defined as 9 to 15 semester hours of graduate credits per semester, while part-time status is defined as 8 or fewer semester hours per semester. Graduate assistants may not register for more than 12 total hours in any semester and must maintain full-time status throughout the time of their assistantship award.

Academic Good Standing

IUP master's students must maintain a minimum of 3.0 ("B") cumulative graduate quality point average to be in good standing academically. Students who fall below good standing are placed on probation for their next active semester or summer term, during which the cumulative average must be raised to 3.0. Students who fail to raise their cumulative averages to at least 3.0 during their probation schedule will be dropped from degree programs and Graduate School rolls and will

not be permitted to register for further courses. A student must be in good standing to be admitted to degree candidacy and to graduate. This policy remains the same for students pursuing a graduate degree at the doctoral level, except the required minimum grade point average is between 3.0 and 3.5, depending upon the program.

Course Auditing

Auditing is not permitted in a graduate course unless the student has been admitted to the Graduate School, received permission to audit from the course's instructor, and been approved for course enrollment by the Dean of the Graduate School. Auditors must pay normal tuition and related fees. An auditor will, with permission from the instructor, participate in class discussion, do practicum work, take examinations, and share generally in the privileges of a class member. If the student completes all course requirements, an "audit" notation is posted to the student's academic record. No student who is required to carry a certain number of credits may count among those credits the credit for an audited course.

Class Cancellation

(See Inclement Weather Policy on page 2.)

Course Numbering

All dual-level courses, open to enrollment by both graduate and qualified undergraduate students, carry 500-599 course numbers; all courses open only to graduate students carry 600-series and above numbers.

Dual-Level Courses

The number of 500-599 course credits applicable to a degree program shall be a maximum of 50 percent of the credits required for that degree. Some programs may call for less than 50 percent. Students should check this requirement with their advisers.

Graduate students who enroll in

dual-level courses should be aware that dual-level courses commonly impose greater obligations on graduate students than on undergraduate students taking the same courses.

Course Overlaps in Degree Programs

Within set limits, a student may use the same course to count in two different master's degree programs, if the course is acceptable in both programs. However, the number of overlap credits counted toward a second master's degree will be limited to 20 percent of the credits in the second master's degree program.

Course Repeat Policy

No graduate credit is given for "F" grades, and graduate grading policy does not permit "D" grades. Students may repeat "C" or "F" grades according to the following policy:

1. Only one course can be repeated for each graduate degree program the student attempts or completes.
2. This one course can be repeated up to two times, for a total of three attempts (the original registration for the course plus two repeat attempts).

Semester hours for repeated courses will be counted only once for all attempts made, and the hours and grade earned when the course was last taken will be used to compute the grade point average. However, all attempts and the original grade(s) will continue to appear on the graduate transcript.

Graduate Course Scheduling by Undergraduates

IUP undergraduate students with an academic grade point average of at least 2.6 who are within 32 semester hours of graduation are permitted, after receiving appropriate approvals, to take up to 6 semester hours of graduate work whether or not they

have applied for acceptance into an IUP graduate program. Graduate hours so earned have no necessary bearing upon the meeting of undergraduate degree requirements, and no assurance is given or implied as to their later applicability toward graduate degrees should the students be admitted to IUP graduate programs. Should these credits later be approved toward a graduate degree program, they will be treated as transfer credits, in accordance with the policy stated below.

Final Credits Policy

All degree candidates must complete their program's final six credits of graduate work in courses offered by IUP. Under unique circumstances, appropriate substitutions may be authorized by petitioning the dean of the Graduate School after obtaining departmental approval.

Degree Eligibility of IUP Teaching Staff

Members of the faculty at IUP with a rank of assistant professor or above (or equivalent) may not receive a graduate degree from this institution. This regulation applies also to any faculty member employed at this institution *full-time* at the instructor rank unless such an individual is already an approved candidate for a degree in the Graduate School of IUP at the time he or she is given full-time employment as an instructor. Faculty members may, however, register for work in the Graduate School and apply the credits earned toward graduate degrees to be conferred by other institutions. Special cases will come before the Senate Graduate Committee.

Grading System

The following grades are used in reporting the standing of students at the end of each semester or summer term:

A - Excellent	I - Incomplete
B - Good	R - Research in
C - Fair	Progress
F - Failure	W - Withdrawal

No "D" grade is recognized in IUP graduate work but may be earned by a graduate student enrolled in an

undergraduate course.

Quality points are assigned as follows: A - 4; B - 3; C - 2. No quality points are carried by the notations F, I, R, and W.

The notation "I" is used to record work which, as far as it has progressed, is of passing grade but is incomplete because of accident, illness, pregnancy, or extreme personal disturbance. "I" grades must be made up within 180 calendar days after the grade was issued; otherwise, the "I" grade will be converted to an "F." The "R" notation pertains only to thesis and dissertation research credits when such research is in progress as a semester or summer session ends, or in certain practicum-type courses approved for this notation by the dean of the Graduate School. All "R" grades are replaced by the grade eventually assigned when the research is completed. The "W" notation applies to certain withdrawals from courses. Withdrawals from the university and discrete course withdrawals are discussed in other sections of this catalog. Note that an "F" is entered in the student's permanent academic record if a withdrawal of either type has not been processed in accordance with established procedures.

Graduate Study Beyond the Master's Degree

It is not unusual to find graduate students enrolling in more courses than they need to meet the requirements of a master's degree. Such action can be beneficial beyond the personal satisfactions which accrue, because the added studies may be well received by employers whether in business, government, or the school system in such matters as certification. However, students should understand that most graduate schools have residency requirements at the doctoral as well as master's level and frequently will accept no more than 30 graduate semester hours earned elsewhere as applicable to a doctorate.

Independent Study

Only six credits of Independent Study work may apply toward a graduate degree unless prior written authorization for hours in excess of six is obtained from the student's graduate coordinator and the dean of the Graduate School, in that order.

Internship Policy

To qualify for a graduate internship appointment, the graduate student must have a minimum of twelve IUP graduate credits earned and a minimum 3.0 grade point average; must have been in full-time enrollment (nine graduate credits or more) during the semester or summer sessions (the latter taken as a whole) immediately preceding the academic period for which internship is requested;* and must meet departmental internship criteria. No more than six internship credits may apply to a graduate degree unless written approval of the student's department chair or graduate coordinator and the dean of the Graduate School (in that order) is obtained. Continuation in an internship experience by a given graduate student is contingent upon the student's maintenance of satisfactory performance in all aspects of his/her degree program. Programmatic exceptions to the foregoing policy can be made only with the approval of the Graduate Committee.

*For graduate students active during summers only, or during fall-spring semesters only, the phrase "immediately preceding the academic period," etc., refers to the student's last preceding active semester or summer session.

Computer Software Policy

It is the policy of IUP that contractually protected and/or copyrighted computer software shall not be improperly copied, distributed, or used by its employees, students, or affiliated organizations. It is the responsibility of each member of the university community to adhere to this policy and to enforce it with regard to those they supervise. If any member of the community has a question regarding

the propriety of using software, s/he is responsible for contacting his/her supervisor for direction. The supervisor may in turn refer the questions to the director of Academic Computing of the ISCC for a decision on what constitutes proper use. The full text of the policy adopted by University Senate and Council of Trustees in May, 1988, is available in the computer laboratories and from the director of Academic Computing.

Academic Integrity Policy

Please see the *IUP Student Handbook*, pages 55-60 of the 1995/97 edition.

Program Changes

To insure their quality and relevance, graduate programs at IUP are subject to review and change by duly appointed and responsible university groups. Because of this, the university recognizes that provisions must be made to prevent hardship to students already enrolled in programs if changes later occur in specific or general program requirements. Students affected by changes in programs, policies, and regulations are therefore given the option of following those requirements in effect when the student was first enrolled in the program or those in effect at the time of expected graduation. The student cannot, of course, combine chosen elements of the two. Should a question of rule interpretation arise with respect to changes, the student, the student's adviser, or both should petition the dean of the Graduate School for a decision about which requirements apply.

Student Rights and Responsibilities

Upon admission to the Graduate School, students assume responsibility for knowing program requirements and following departmental advising requirements when selecting and registering for courses. Students are also responsible for knowing the procedures for paying fees, processing class drop-adds and withdrawals, and applying for and

meeting all requirements for graduation. Conversely, students have the right to expect that program requirements will be made clear, that course requirements—including grading criteria and procedures—will be made known early in a course, and that course grades will represent the instructor's professional and objective evaluation of performance. Students have the right to instruction that encourages the free and open discussion of ideas and that respects reasonable student needs and aspirations. Students share with instructors the responsibility for creating a classroom atmosphere that encourages maximum learning and exhibits a more intense scholarly zeal than that expected in undergraduate studies.

Teacher Certification

Ordinarily, students with a previously earned baccalaureate degree will enroll as second degree undergraduate students in the program for which they wish to earn Pennsylvania teacher certification. Admission is through the dean of continuing education. Program details are found in the IUP undergraduate catalog. There are a few programs where special adaptations permit candidates for initial certification to be candidates for graduate degrees. The current list of these programs is available in the office of the associate dean for Educational College-School Partnerships in the College of Education. Call (412) 357-2485.

Candidates for second certification are admitted through the School of Continuing Education. Applicants who already hold one Pennsylvania teaching certificate and desire to add another instructional certificate must consult both the associate dean for Educational College-School Partnerships and the program coordinator in the subject area department for assistance in developing an individually planned program of study. Typically, second or additional certifications involve study only at the undergraduate level. Occasionally, work toward a second certification can be combined with work towards a graduate degree.

Time Limitations

Program credits earned at IUP or accepted by transfer are applicable to IUP master's degrees over a period not to exceed five years from the date of their earning unless the period is extended through student petition approved by the student's department and the dean of the Graduate School. Doctoral candidates must complete degree requirements no later than seven years after beginning IUP doctoral program course work unless an extension similarly is authorized. No time extensions are considered for doctoral students unless all degree requirements (other than the dissertation) have been completed by the expiration of the seven-year time limit.

Workshops and Special Credits

The following policy governing workshop and other special-offering credits was passed by the University Senate on May 8, 1979:

The individual master's degree candidate may submit for credit for his or her degree no more than six (6) semester hours of workshop and other special-credit offerings approved by the department offering the degree. Doctoral candidates may submit a further six (6) semester hours of such work beyond the master's or its equivalent if approved by the degree-granting department. Should the workshop(s) or special credit offering(s) later become a catalog-listed course which is part of the degree program, while the student is still working toward his/her degree, the student may request of the department a retroactive reclassification of credits so earned and upon approval may again use workshop or special offering credits, up to the above maximum, toward a degree. However, the graduate transcript will continue to show the original special topics number and course title under which the course was registered.

Student Grade Appeal Policy

Grade Review Policy

If a student disagrees with the evaluation of his/her work by the instructor but has no basis for a charge of "discrimination" or "capricious evaluation," the student should discuss the matter directly with the instructor and, if unsatisfied, with the department chairperson and, if still unsatisfied, with the dean of the college in which the course was offered. In such cases, the decision of the instructor shall be final.

If a student believes that an improper grade has been assigned, an appeal may be filed on the following grounds:

1. **Discrimination:** On the basis of race, religion, national origin, sex, age, ancestry, handicapped status, affectional or lifestyle preference, or political affiliation.
2. **Capricious Evaluation:** Significant and unwarranted deviation from grading procedures and course outlines set at the beginning of the course (ordinarily in a written statement during the first week of the course) or grade assigned arbitrarily on the basis of whim or impulse. The student may not claim capriciousness if he or she disagrees with the subjective professional evaluation of the instructor.

Procedures of Appeal

Level I: Informal Resolution

Every effort should be made to resolve the disagreement at Level I. The student must first seek a resolution to the disagreement with the instructor either in person or in writing. If the student is not satisfied with the results, the student must then speak with the chairperson of the department that offers the course. If still unsatisfied, the student must discuss the matter with the dean of the college in which the course is offered. A Student Congress member may accompany and advise the student during the Level I procedures. Only after all attempts

for resolution at Level I have been exhausted may the student initiate Level II.

Level II: Appeal Screening

- A. **Composition:** Each year there shall be appointed a Grade Appeals Committee to determine the existence of the substantive basis for appeal. The committee will be composed of seven voting members: three faculty members appointed by APSCUF, three members elected by and from the Senate Academic Committee (one faculty member, one administrator, one student), and one student appointed by the Student Congress. A quorum consists of a majority of the committee. To take action, a majority of those present must be faculty members.
- B. **Procedure to Initiate Appeal:** To initiate Level II of the appeal, the student must file an appeal form with the Provost's Office. This form must be filed within sixty (60) calendar days of the beginning of the semester immediately following the semester in which the grade was received. The Provost's Office may extend the sixty-day limit only in unusual circumstances when equity demands it and when the student's own procrastination or misunderstanding did not substantially contribute to the delay. [Note: Grade appeals will not generally be processed during the summer. Therefore, the appeal of any grade received in the spring or summer sessions normally will be processed in the fall. A review will be scheduled in the summer only when the student's academic eligibility is jeopardized by the grade in question or when the student is a graduating senior.] The Provost's Office will notify the appropriate dean, department chairperson, faculty member, and the Student Congress president of the student's initiation of the Level II process.
- C. **Procedure to Process Appeal:** The student will be expected to submit written documentation of

his/her complaint and the faculty member will be expected to submit in writing the course grading procedure and any other pertinent information. Appeals based on discrimination will be reviewed according to current standards of nondiscriminatory action. Appeals based on capriciousness will be reviewed in light of the faculty member's announced evaluation and grading system. The committee will review the materials to deny or confirm appeal continuance. Denial of appeal continuance must be by a negative vote of four members of the committee. This committee will inform the Provost's Office of its findings. Within five (5) class days of the receipt of the committee's report, the provost or designee will notify the student and the faculty member of the findings. If the basis for appeal is determined to be substantive, the provost or designee will schedule a Grade Review Panel within fifteen (15) class days to be convened prior to the conclusion of the semester.

Level III: Appeal Review

- A. **Composition:** The Grade Review Panel will consist of five voting members: one academic dean or associate dean and four faculty members. Four-fifths of the voting members will be a quorum. The Student Congress Academic Affairs Committee chairperson may advise as requested by the student. The affirmative action officer will advise in appeals based on discrimination. The panel will be constituted from the Grade Review Pool by random selection. The panel chairperson will be elected by and from the panel before each review.
- B. **Membership:** The Grade Review Pool will be established in the spring term to serve for the following academic year. The pool and rotational order within the pool will be established by the Provost's Office. A pool of three deans or associate deans and twelve full-time faculty members will be maintained. In

establishing the membership for each review panel, prior to each review the names of those designated as primary members of the specific panel and available as alternates will be supplied to all parties involved. A panel member may request (to the provost or designee) disqualification due to a conflict of interest. The student and the faculty member may eliminate names in proportion to the composition of the panel. Each may eliminate only one dean/associate dean and four faculty members. The instructor and the student will be supplied a list of all primary and secondary pool members. The opportunity to disqualify panel members will take place only once. Resulting vacancies will be filled from the appropriate pool of alternates so that the panel will be composed of one dean/associate dean and four faculty members. If through self-disqualification and challenges a panel cannot be constituted from the pool, then the Office of the Provost will supplement the pool using appropriate random selection methods.

C. Procedure:

1. Both the student and the instructor will have the right to appear before the panel, present witnesses, and offer evidence. In addition to those specified in Level III, Section A, each may also bring one observer, with whom they may consult but who may not participate in the review.
2. The panel shall determine its rules of order for internal operation. After hearing the evidence brought forth, the panel will privately deliberate and render a decision. If the grade appeal is upheld, the panel will constitute a committee of three appropriate faculty members (ordinarily faculty members from the department in which the course is offered) who will review the student's work and determine the appropriate

grade or suitable remedy.

The panel will incorporate this information in the determination which it then forwards to the Provost's Office for implementation. (The panel may recommend or the department may deem it appropriate that the grades of other students in the class also be reviewed.)

3. The written report sent to the Provost's Office will state whether the student's appeal is upheld or denied; if upheld, the committee's evaluation and remedy will be included. All documents supporting the report will be sealed and kept only as long as necessary to insure the appropriate action is taken (normally one year) before being destroyed or returned to the individual presenting the evidence.

Implementation

- A. Faculty Compensation: If a Review Panel (hearing) is scheduled at a time in the summer when any faculty member involved is not under contract, the faculty member will be compensated under terms mutually agreed upon at Meet-and-Discuss.

- B. Continuing Rights: This appeal does not supplant any legal rights afforded by the Commonwealth of Pennsylvania and/or the Government of the United States. Nothing in this policy abrogates or modifies any provisions of or rights under the Collective Bargaining Agreement.
- C. Intended Purpose: The grade appeal procedures are designed simply as a means to resolve differences between students and faculty related to grading. Under no circumstances should the results of a grade appeal be used for disciplinary action or personnel.
- D. *Amendment: Amendments may be implemented upon concurrence by University Senate, APSCUF Representative Council, and Meet-and-Discuss.

*Note: In the amendment process above, specification of University Senate implies the Council of Trustees' role in approving Senate actions and recognizes the Council of Trustees' final action to change policy.

This policy replaces the policy originally effective at the beginning of the Spring Semester, 1986. Approved: University Senate, May 2, 1989; Council of Trustees, May 19, 1989.



Course Prefix Key

The following departmental abbreviations are used to identify courses referred to in the catalog:

Accounting	AG	Geography and Regional Planning	GE
Administrative Services	AD	Geoscience	GS
Adult Education	AC	Graduate School	GR
Art History	AH	Health and Physical Education	HP
Applied Music	AM	History	HI
Anthropology	AN	Home Economics Education	HE
Art	AR	Information Management	IM
Biology	BI	Administration and Leadership Studies	LP
Business Education	BE	Industrial and Labor Relations	LR
Business Law	BL	Management	MG
Chemistry	CH	Marketing	MK
Communications Media	CM	Mathematics	MA
Computer Science	CO	Music History	MH
Consumer Services	CS	Music	MU
Counseling, Adult Education, and Student Affairs	CE	Nursing	NU
Criminology	CR	Philosophy	PH
Early Childhood Education	EE	Physics	PY
Economics	EC	Political Science (Public Affairs)	PS
Education	ED	Psychology	PC
Education Administration	EA	Quantitative Business	QB
Educational Psychology	EP	Safety Sciences	SA
Elementary Education	EL	Science	SC
Elementary Mathematics	EM	Social Science	SS
English	EN	Sociology	SO
Finance	FI	Spanish	SP
Food and Nutrition	FN	Special Education	
Foundations of Education	FE	Education of Exceptional Persons	EX
French	FR	Speech-Language Pathology	SH
		Student Affairs in Higher Education	ST

Eberly College of Business

The Eberly College of Business offers two graduate programs: the Master of Business Administration (M.B.A.) with full-time, part-time evening, and executive tracks (Pittsburgh area and Johnstown locations); and the Master of Education in Business (M.Ed.).

Master of Business Administration (M.B.A.)

The Master of Business Administration degree program is designed to serve the needs of junior- and intermediate-level business executives who are seeking additional knowledge and skills to do a more efficient job of problem solving and decision making. Also, the program is structured to give recent college graduates advanced training in business management prior to entry into a business career. The M.B.A. may be taken on either a part-time or full-time basis. Courses are scheduled for both day and night sessions, including a full schedule of course offerings in the summer.

Core I of the program consists of ten undergraduate prerequisite courses (31 s.h.) that are designed to provide a foundation in the basic concepts and techniques used in today's business world and prepare the student for the graduate courses in business administration.

Core II of the program consists of 33 credit hours in courses that provide advanced knowledge in the functional and applied areas of business. The 33 credit hours consist of eleven graduate courses (eight required courses and three elective courses chosen by the student from an approved list). Students are not required to have a specific major in the M.B.A. program. The objective of the program is to offer the student either the opportunity to sample a variety of fields of business or to develop depth in one special area of interest.

Normally, a student with a recent bachelor's degree in Business Administration from a fully accredited university will have completed all of the Core I courses. This will enable the student to complete the M.B.A. program in one year of full-time study, whereas a nonbusiness major will require two years—one year for the Core I or undergraduate courses and one year for the Core II or graduate course requirements. Part-time students typically require between two and five years to complete the program.

Students who have been admitted to the M.B.A. program and who have Core I prerequisites remaining may receive special permission to take some of the courses elsewhere. Students must receive specific permission for all such courses from the College of Business graduate coordinator. Also, it is possible to complete some of these courses by examination only. Again, advance permission is required.

Admissions Criteria

In addition to meeting admission requirements of the Graduate School, students seeking enrollment in the M.B.A. program must achieve a satisfactory score on the Graduate Management Admission Test (GMAT) before

admission to the degree program. Information about the GMAT can be obtained from the Educational Testing Service, Princeton, NJ 08540 or from IUP University Testing Services, which is located in Career Services ([412] 357-2235).

Program Requirements

Core I

31 s.h. in the following undergraduate courses with a grade of "C" or better:

AG 201	Accounting Principles I	3 s.h.
AG 202	Accounting Principles II	3 s.h.
BL 235	Introduction to Business Law	3 s.h.
EC 122	Principles of Economics II	3 s.h.
FI 310	Finance I	3 s.h.
IM 241	Introduction to Management Information Systems	3 s.h.
MA 121	Calculus I for Business, Natural and Social Sciences	4 s.h.
MG 310	Principles of Management	3 s.h.
MK 320	Principles of Marketing	3 s.h.
QB 215	Business Statistics	3 s.h.

Students will be given credit for Core I undergraduate prerequisite courses taken at IUP or at other appropriate institutions with prior permission. See the IUP undergraduate catalog for course descriptions.* Students should contact the College of Business graduate coordinator to ascertain the appropriateness of prior undergraduate work and any special requests for prerequisite waivers. Prior written permission is required to take courses at any other institutions.

*Some of the Core I course requirements may be fulfilled by a successful completion of College Level Examination Program (CLEP) tests in these subjects.

Core II

33 s.h. in the following graduate courses:

A. Required:

AG 607	Management Accounting**	3 s.h.
EC 634	Economics of Corporate Decisions	3 s.h.
FI 630	Financial Management	3 s.h.
IM 640	Management Information Systems	3 s.h.
MG 613	Organizational Analysis	3 s.h.
MG 695	Business Policy	3 s.h.
MK 603	Marketing Management	3 s.h.
QB 601	Quantitative Methods	3 s.h.

**Not open to students who have taken AG 311 Cost Accounting or its equivalent.

B. Three courses chosen by the student in the following elective graduate courses:

Accounting:		
AG 501	Advanced Accounting	3 s.h.
AG 512	Advanced Cost Accounting	3 s.h.
AG 531	Auditing	3 s.h.
AG 608	Seminar in Accounting Issues	3 s.h.
AG 610	Accounting Systems	3 s.h.
AG 612	Advanced Tax Accounting	3 s.h.
AG 613	Financial Statement Analysis	3 s.h.

Administrative Services:		
AD 610	Business Communications and Report Writing	3 s.h.

Business Law:		
BL 633	Case Problems in Business Law	3 s.h.

Finances:		
FI 510	Financial Institutions and Markets	3 s.h.
FI 520	Investment Analysis	3 s.h.
FI 522	Seminar in Finance	3 s.h.
FI 631	Advanced Financial Management	3 s.h.
FI 632	Seminar in Finance	3 s.h.
FI 635	Principles of Investments in Securities	3 s.h.

Management Information Systems:		
IM 550	Database Theory and Application	3 s.h.
IM 551	Systems Analysis	3 s.h.
IM 570	Systems Design	3 s.h.
IM 580	Distributed Business Information Systems	3 s.h.
IM 641	Business Data Processing I	3 s.h.
IM 642	Business Data Processing II	3 s.h.

Management:		
MG 623	Seminar in Personnel	3 s.h.
MG 630	Management Theory	3 s.h.
MG 631	Management Development and Training	3 s.h.
MG 635	Seminar in Management and Organizational Leadership	3 s.h.
MG 636	The Evolution of Management	3 s.h.
MG 642	Organizational Behavior	3 s.h.
MG 645	Case Problems in Business Human Relations	3 s.h.

Marketing:		
MK 521	Marketing Research	3 s.h.
MK 530	International Marketing	3 s.h.
MK 531	Industrial Marketing	3 s.h.
MK 610	Marketing Behavior	3 s.h.
MK 611	Marketing Communications	3 s.h.
MK 621	Marketing Research	3 s.h.

Quantitative Business:		
QB 602	Seminar in Management Science	3 s.h.
QB 604	Seminar in Methodology of Business Research	3 s.h.

Other: 581/681 Special Topics courses offered with the following prefixes: AG, BL, FI, IM, MG, MK, and QB; other business-related courses with prior approval of the College of Business graduate coordinator.

Students may take one 500-level course without permission of the College of Business graduate coordinator. Additional 500-level courses require prior written approval. Students may elect one graduate-level course outside the College of Business in related fields as an elective with prior approval of the College of Business

graduate coordinator. Examples of other such areas may include Labor Relations, Economics, and other related fields.

Master of Business Administration (Executive Track)

The Master of Business Administration-Executive Track Program is designed to serve the needs of experienced managers from industrial, financial, nonprofit, and small business as well as the public sector and allows them to earn an M.B.A. degree without interrupting their careers. A Saturday-only class format allows participants to complete a master's degree in Business within two years at a convenient time and location. A lock-step format in which members of each class begin the program at the same time, do all the required courses together, and typically complete the program as a group facilitates the formation of long-term study groups and extends a peer group or cohort experience to the participants that becomes a long-lasting network which develops both business and social contacts. Limited class size with careful selection of participants insures a wide variety of professional backgrounds. An opportunity to experience a learning forum provides exposure to peers from all organizational settings in a cohesive, networking environment. The M.B.A.-Executive Track program offered by IUP will constitute a demanding experience for participants. The program will prepare each individual to accept increased responsibilities in general management. The curriculum offers broad training in foundations of management and basic analytical techniques while exposing students to contemporary management tools and technologies. The prevailing theme of the program is the emphasis on strategic decision making in a changing global environment.

Admissions Criteria

Undergraduate degree (no specific major), official GMAT scores, three or more years supervisory/managerial/professional experience, and nomination and full sponsorship by an organization (preferred). Participants who have not had recent academic training are expected to update their mathematical and calculus skills concurrent with or before beginning the M.B.A.-Executive Track Program.

Program Requirements

The program will include a one-day, mandatory, on-campus orientation period for all students. Students will be introduced to graduate faculty and will be exposed to campus-based facilities and resources. Students will have an opportunity in a social setting to discuss program objectives/characteristics with graduate faculty and the administration of the college.

Fifty-one s.h. of 500- and 600- level course work (42 semester hours of core courses and 9 semester hours of electives to be chosen by the group) as follows:

FN 646	Vitamins and Minerals	3 s.h.
FN 711	Nutrition in the Life Cycle	3 s.h.
FN 743	Clinical Dietetics	3 s.h.

III. Electives 12 s.h.

Students will elect additional courses from the *IUP Graduate Catalog* with the approval of their adviser.

Total semester hours 35 s.h.

Suggested Ancillary Courses

FN 562	Advanced Experimental Foods	3 s.h.
FN 698	Internship	1-6 s.h.
AC 620	Introduction to Adult and Community Education	3 s.h.
AC 621	The Adult Learner	3 s.h.
AC 622	Program and Process Development in Adult and Community Education	3 s.h.
AC 623	Organization and Administration in Adult and Community Education	3 s.h.
AC 625	Facilitating Adult Learning	3 s.h.
EP 616	Applied Research Methods	3 s.h.
EP 715	Doctoral Seminar in Applied Educational Research	3 s.h.
GR 517	Statistical Methods II	3 s.h.
IIP 510	Exercise Prescription	3 s.h.
HP 512	Physical Activity and Stress Management	3 s.h.
HP 513	Physical Activity and Aging	3 s.h.
HP 601	Sport and Society	3 s.h.
HP 632	Assessment of Human Physiological Functions	3 s.h.
LR 631	Human Resource Management in the Public Sector	3 s.h.
NU 617	Issues in Health Care	3 s.h.

Health and Physical Education

The Master of Science degree in Sport Sciences is designed to attract students from nonteaching professions as well as the teaching profession. It is discipline-oriented with provision for the student to choose between two major areas of emphasis: professional specialization and sport studies. Options for professional specialization are provided in sports management, sports information, sports media, and aquatics administration and facilities management. Options in sport studies are interdisciplinary in nature and tailored to meet individual needs and interests.

Requirements for Admission

To be admitted to the Health and Physical Education Department, the applicant must have completed the requirements for a bachelor's degree from an accredited college or university and fulfill the general requirements for admission to the Graduate School for a master's degree as discussed in this bulletin.

Requirements for Candidacy

Acceptance into the Graduate School permits a student to take course work in the department. If a student wishes to become a degree candidate, he/she must complete the application for candidacy and forward this form to the dean of Health and Human Services after having

successfully completed six hours of course work in the department.

Master of Science in Sport Sciences

Students may choose between a thesis or non-thesis curriculum depending upon individual preferences and needs.

I. Thesis Degree Requirements 30 s.h.

A. Core Courses 20-24 s.h.

HP 600	History of Philosophy of Sport	3 s.h.
HP 601	Sport and Society	3 s.h.
HP 602	Sport Psychology	3 s.h.
HP 603	Physiological Basis of Sport	3 s.h.
GR 516	Statistical Methods I	3 s.h.
GR 615	Elements of Research	3 s.h.
HP 850	Thesis	3-6 s.h.

B. Electives 6-10 s.h.

Students may, with the advice and consent of an adviser, select electives from any of the approved graduate-level courses.

II. Non-thesis Degree Requirements 36 s.h.

A. Core Courses 18 s.h.

HP 600	History of Philosophy of Sport	3 s.h.
HP 601	Sport and Society	3 s.h.
HP 602	Sport Psychology	3 s.h.
HP 603	Physiological Basis of Sport	3 s.h.
GR 516	Statistical Methods I	3 s.h.
GR 615	Elements of Research	3 s.h.

B. Electives 18 s.h.

3 s.h. from the following:

HP 631	Motor Learning	3 s.h.
HP 632	Assessment of Human Physiological Functions	3 s.h.
HP 633	Kinesiological Principles	3 s.h.
HP 634	Current Literature in Sport	3 s.h.
HP 637	Sport Facilities Management	3 s.h.
HP 680	Seminar	3 s.h.
HP 681	Special Topics	3 s.h.

In addition, the student is required to earn 15 s.h. from any approved graduate-level courses with the advice and consent of an adviser.

Nursing

The Master of Science degree in Nursing is fully accredited by the National League for Nursing and is designed to prepare the graduate for the role of nurse educator or nurse administrator and serves as a foundation for doctoral study. The nurse educator is prepared for a career in a nursing education program or a nursing staff development setting or as a patient educator. The nurse administrator is prepared for management positions in a variety of health care settings.

On completion of the degree, the student is prepared to

- synthesize advanced knowledge and theories to support competent practice in nursing education or nursing administration
- provide leadership which influences nursing practice and contributes to the advancement of the nursing profession
- use advanced research knowledge and skills in the identification and resolution of nursing problems

The Adult Health Clinical Component is required of all students. It is designed as an adjunct to the study in leadership, nursing education, and nursing administration. The clinical component builds on the knowledge and skills of baccalaureate nursing education and provides for the attainment of advanced knowledge and skills of baccalaureate nursing education and provides for the attainment of advanced knowledge and related theories in nursing and their application to advanced practice. A variety of primary, secondary, and tertiary health care settings in a wide geographical area are utilized for clinical practice sites.

This forty-five credit program requires completion of the following four sets of requirements:

I. Leadership Core	18 s.h.
GR 516 Statistical Methods I	3 s.h.
NU 615 Advanced Nursing Research	3 s.h.
NU 617 Issues in Health Care	3 s.h.
NU 618 Professional Role Development	3 s.h.
NU 619 Leadership Strategies in Nursing	3 s.h.
NU 620 Theoretical Foundation for Nursing	3 s.h.
II. Adult Health Nursing	9 s.h.
NU 640 Dynamics of Health in the Adult	3 s.h.
NU 641 Nursing Management of Adults Under Stress	3 s.h.
NU 742 Adult Health Nursing Practicum	3 s.h.

III. Either

A. Education Track	12 s.h.
NU 724 Curriculum Development for Nursing Programs	3 s.h.
NU 725 Teaching Strategies for Nursing Curricula	3 s.h.
NU 726 Clinical Instruction in Nursing	3 s.h.
NU 741 Education Practicum	3 s.h.

or

B. Administration Track	12 s.h.
MG 613 Organizational Analysis	3 s.h.
NU 727 Principles of Nursing Management	3 s.h.
NU 728 Administration of Nursing Services	3 s.h.
NU 740 Administration Practicum	3 s.h.

IV. Either

A. (Thesis Option)	
NU 850 Thesis	6 s.h.

or

B. (Non-thesis Option)	
NU 621 Nursing Inquiry	3 s.h.
An approved elective	3 s.h.

As a culminating activity, the student is required to pass a written comprehensive examination which requires the student to analyze and synthesize theory, concepts, and methodologies learned over the period of study for the degree.

Safety Sciences

The Department of Safety Sciences offers a program of studies leading to a Master of Science degree in Safety Sciences. A thesis or non-thesis curriculum is available.

Students have the opportunity to choose from a wide selection of course offerings or select a specialized area. In addition, students may choose elective courses, with approval of adviser, in fields directly related to safety sciences. The program is designed for individuals with relevant experience in safety sciences and those with appropriate undergraduate preparation who are interested in pursuing careers in the profession.

Department Admission Requirements

In addition to meeting the requirements for admission to the Graduate School, a student intending to work toward a Master of Science in Safety Sciences will be required to have the following prerequisite professional preparation:

Entry-level competency in the four subdisciplines: Safety Management, Occupational Safety, Occupational Health, and Fire Protection through relevant education, documented work experience, certifications, or other means acceptable to the Safety Sciences Graduate Committee.

Relevant education would include the student's undergraduate preparation which, in general, should include a minimum of 6 semester-hour credits in each of the following: Chemistry, Physics, and Mathematics.

When the Safety Sciences Graduate Committee determines that a deficiency in work experience or relevant education exists, a student will be required to complete additional studies to eliminate the deficiency.

Master of Science in Safety Sciences

All students are required to take a total of 36 hours, of which 18 hours are core courses. The student must choose the remaining 18 hours in a specialized or generalized option. Students may choose between a thesis or non-thesis curriculum.

I. Required Core Courses	18 s.h.
SA 601 Concepts of Risk Assessment	3 s.h.
SA 602 Quantitative Methods in Safety Management	3 s.h.
SA 603 Human Relations in Safety Management	3 s.h.
SA 604 Industrial Toxicology	3 s.h.
SA 605 Advanced Principles of Safety Engineering	3 s.h.
SA 606 Hazardous Materials Management	3 s.h.
II. Additional Requirements	18 s.h.

A. Thesis Option

- (1) SA 850 Thesis 3-6 s.h.
and (2) or (3) specified below:
(2) Electives, Specialized Option:
At least two courses chosen from list of
Safety Elective Courses (see below) 6-9 s.h. minimum
Approved electives 6 s.h.

or

(3) Electives, Generalist Option:

At least four courses, one in each subdiscipline, from list of
Safety Elective Courses (see below) 12 s.h. minimum
Approved electives 0-3 s.h.

B. Non-thesis Option 18 s.h.

(1) Electives, Specialized Option:

Two courses in one chosen subdiscipline from list of
Safety Elective Courses (see below) 6 s.h.
Approved electives 12 s.h.

or

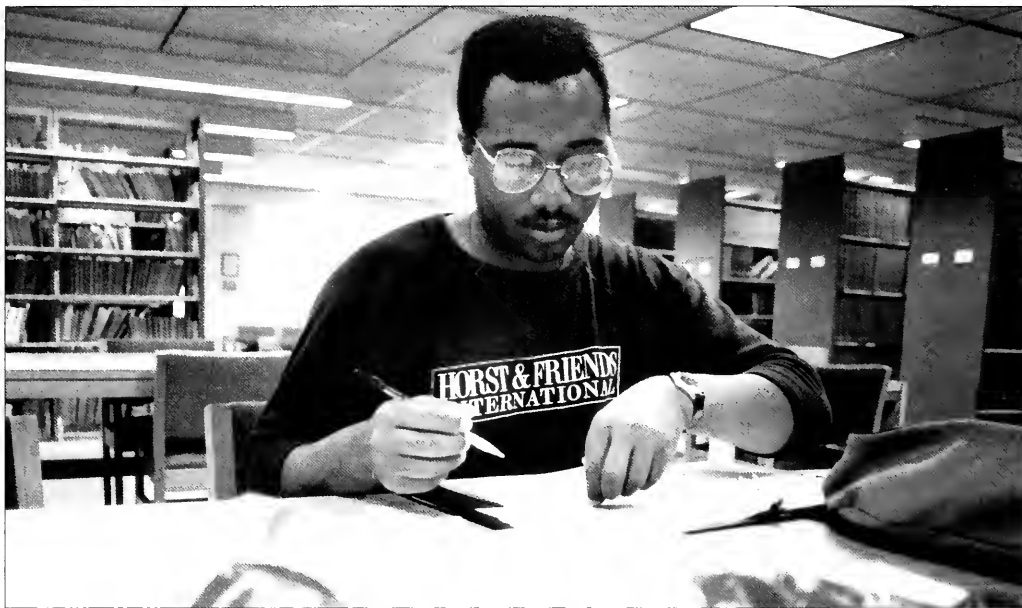
(2) Electives, Generalist Option:

Four courses, one in each subdiscipline, from list of
Safety Elective Courses (see below) 12 s.h.
Approved electives 6 s.h.

Safety Elective Courses

SA 541 Accident Investigation	3 s.h.
SA 561 Air Pollution	3 s.h.
SA 562 Radiological Health	3 s.h.
SA 620 Safety Data Management	3 s.h.
SA 623 Advanced Safety Administration	3 s.h.
SA 643 Construction Safety	3 s.h.
SA 663 Industrial Hygiene Laboratory Methods	3 s.h.
SA 672 Process Safety in the Chemical Industries	3 s.h.
SA 673 Disaster Preparedness	3 s.h.
SA 674 Fire Safety in Building Design	3 s.h.

College of Humanities and Social Sciences



The College of Humanities and Social Sciences offers master's degrees in Criminology, English, Geography and Regional Planning, History, Industrial and Labor Relations, Political Science, and Sociology. Doctorates are awarded in Criminology and in English (Literature and Criticism, Rhetoric and Linguistics).

Criminology

The Department of Criminology offers a program of study leading to a Master of Arts and a Doctor of Philosophy degree in Criminology. The programs are designed to prepare graduate students for careers in academia as well as upper-level administrative positions in various fields of justice. The programs allow the student to choose from a wide selection of courses within the Department of Criminology as well as elective courses in related departments.

The Master of Arts program is offered in two locations. The M.A. program on the main campus offers full-time or part-time study. A part-time evening program is also offered in the greater Pittsburgh area. The doctoral program is offered on the main campus; full-time or part-time study is permitted.

Master of Arts in Criminology

Department Admission Requirements

In addition to meeting the requirements for admission to the Graduate School, a student intending to work toward a Master of Arts in Criminology will be required to have the

following prerequisite academic and/or professional preparation:

- A. Students should be able to demonstrate a sound understanding of criminological theory and the criminal justice system (generally satisfied by a bachelor's degree in criminology, criminal justice, or related field); or.
- B. Students should have knowledge gained through experience within the system of justice system or by specialized training or completed graduate or undergraduate studies in a related field.*

*All applicants for the Master of Arts degree in Criminology must possess the essence of knowledge offered in the undergraduate (B.A.) program core courses. These courses are

- CR 102 Survey of Criminology
- CR 210 Criminal Law
- CR 300 Theory of Complex Criminal Justice Organizations
- CR 306 Criminological Research Methods
- CR 400 Theoretical Criminology
- CR 401 Contemporary Issues in Criminology

If, upon the consideration of the Department of Criminology Graduate Committee, an applicant is deemed to be deficient, the department, through the master's coordinator, will require appropriate undergraduate courses to remove these deficiencies. Students may begin master's studies in either semester or the summer.

Master of Arts in Criminology

Students must choose between a thesis or no-thesis curriculum:

Thesis Degree Requirements—A total of 36 semester hours is required, including:

CR 600	Criminological Theory	3 s.h.
CR 601	Proseminar	3 s.h.
CR 605	Research Methods	3 s.h.
CR 610	Legal Issues in Criminology	3 s.h.
CR 630	Seminar in Administration and Management in Criminal Justice	3 s.h.
CR 631	System Dynamics in the Administration of Justice	3 s.h.
CR 718	Quantitative Strategies for Criminology	3 s.h.
CR 730	Ethical and Philosophical Issues in Criminology	3 s.h.
CR 849	Comprehensive Examination	0 s.h.
CR 850	Thesis	3-6 s.h.
Electives		6 s.h.
Total		36 s.h.

No-Thesis Degree Requirements—A total of 36 semester hours is required, including:

CR 600	Criminological Theory	3 s.h.
CR 601	Proseminar	3 s.h.
CR 605	Research Methods	3 s.h.
CR 610	Legal Issues in Criminology	3 s.h.
CR 630	Seminar in Administration and Management in Criminal Justice	3 s.h.
CR 631	System Dynamics in the Administration of Justice	3 s.h.
CR 718	Quantitative Strategies for Criminology	3 s.h.
CR 730	Ethical and Philosophical Issues in Criminology	3 s.h.
CR 849	Comprehensive Examination	0 s.h.
Electives		12 s.h.
Total		36 s.h.

Doctor of Philosophy in Criminology

Department Admission Requirements

It is expected that most students entering the Ph.D. program in Criminology will have already completed a master's degree in either Criminology or a closely related discipline. However, in select cases, a highly qualified applicant may enter the doctoral track only with a baccalaureate degree. Such students would obtain the M.A. degree enroute to the Ph.D.

Applicants must meet all Graduate School admission requirements. Additionally, the doctoral coordinator, after consulting with the department screening committee, will submit a recommendation regarding applicants to the Graduate School. The following criteria are reviewed:

1. all college transcripts
2. three letters of recommendation
3. statement of goals
4. example of written work (thesis, articles, reports, etc.)
5. GRE scores (a combined score of 900 on the verbal and quantitative sections is expected. Some flexibility

may be granted at the discretion of the screening committee.)

6. skill requirement (foreign language, computer or statistical ability, or other skills approved by the screening committee or the department's graduate curriculum committee)
7. personal interview (may be requested by department screening committee or by applicant)

Deficiencies in the skill requirement may be satisfied after admission. The screening committee may request an interview with the applicant, or such may be initiated by the applicant. Students may begin doctoral studies in either semester or in some cases during the summer.

Curriculum

The Ph.D. program in Criminology is designed to be completed in approximately three calendar years of full-time study beyond the master's. The curriculum requires a minimum of 54 semester hours of acceptable graduate credit. Each student must complete requirements for (a) course work; (b) special proficiency requirements; (c) comprehensive examinations; (d) skill requirement, if needed; and (e) dissertation.

A. Required Course Work

1. Core Courses (21 semester hours):

CR 710	Advanced Theoretical Criminology	3 s.h.
CR 717	Advanced Qualitative Methods	3 s.h.
CR 718	Quantitative Strategies for Analysis in Criminology	3 s.h.
CR 720	Advanced Quantitative Methods	3 s.h.
CR 730	Ethical and Philosophical Issues in Criminology	3 s.h.
CR 740	Advanced Criminal Justice Policy	3 s.h.
CR 750	Doctoral Colloquium in Criminology	3 s.h.

2. Criminology Electives: 6 semester hours minimum

3. Advanced Applied Research: 9 semester hours minimum

4. Other Electives: 6 semester hours from Criminology or related disciplines

B. Qualifying Examination: Upon completion of the core courses a student must arrange with the doctoral coordinator to take the qualifying examination to be based upon the core subject areas. After successful completion, a student may proceed toward fulfillment of remaining degree requirements.

C. Special Proficiency Examination: Areas of Concentration—Each student must decide upon one subspecialty within Criminology. Upon consultation with the student, the student's advisory committee, and the doctoral coordinator, a proficiency exam will be administered.

D. Skill requirement: (0-6 semester hours) A deficiency in this area may be remedied by completing one of the following alternatives:

- foreign language competency
- computer language skills
- advanced competency in statistics
- other appropriate courses/subjects as approved by the doctoral coordinator

Further details regarding any of these skill requirements can be obtained from the doctoral coordinator.

E. Dissertation: In accordance with university guidelines, successful completion of a doctoral dissertation is required (12 semester hours).

Residency

The following options are available to doctoral students for satisfying residency requirements:

1. completion of a minimum of nine graduate credits at IUP in each of at least two consecutive semesters
2. completion of a minimum of nine graduate credits at IUP for at least one semester immediately preceding or following a summer of 9 semester hours of study
3. completion at IUP of at least nine graduate credits in each of two consecutive summers plus six graduate credits during the intervening academic year

Part-Time Study

This program may admit each year some students whose intention is to complete the program on a part-time basis. Course offerings can be expected to fluctuate, especially in the expansion of new course offerings. A complete and updated description of any changes can be obtained from the Department of Criminology.

English

Master of Arts in English

The M.A. in English, revised in 1989, responds to the needs of four groups of students: those interested in gaining a generalist background in graduate English studies, students wanting to concentrate on literature, students seeking secondary English certification or desiring to enhance their existing skills in teaching English, and students concerned with teaching English to speakers of other languages. Each of the four options for the M.A. requires 36 credit hours, either of course work (twelve courses) or a combination of course work and an internship or thesis. Each option has its own set of requirements for distributing those 36 hours, and each has its own admissions committee. When you apply for admission, you must indicate which degree option you wish to pursue.

The generalist (M.A./GEN) option is designed for students who wish course work in several areas of English to attain a balanced background in the discipline and gain preparation for more advanced doctoral work, for teaching at the community-college level, or for a career in such professional fields as publishing or translation. The literature (M.A./LIT) option is for active professionals who wish to further their expertise in literature and for students who wish to prepare for work on a Ph.D. in British and American literature and criticism. The teaching English (M.A./TE) option is for in-service secondary English teachers who wish advanced in-depth study in the teaching of English and for students with the bachelor's degree in English (or its equivalent) who wish to pursue initial certification. The M.A./TESOL option

prepares students in the theory and practice of teaching English to speakers of other languages in a variety of settings within (ESL) and outside (EFL) the United States.

IUP's M.A. in English has courses available in active summer sessions and during the academic year. As there is no specific residency requirement for the M.A. at IUP, students are not required to attend the program full time during the academic year; much of the work may be accomplished over the course of several summers—although certain courses required in several of the programs are offered only during the normal academic year. Students attending full time can complete the M.A. in English in as little as a single year or may spread their work out over two or three years. Thus, the M.A. in English at IUP offers the advantages of both professional focus and personal flexibility.

M.A. Program Descriptions

M.A./Generalist

The Master of Arts/Generalist (M.A./GEN) option is for students who wish course work in several areas of English. This track provides preparation for more advanced doctoral work, for teaching at the community-college level, or for careers in such professional fields as publishing or translation.

M.A./Generalist Course Requirements

A. Core Courses		15 s.h.
EN 630	Research on the Teaching of Literacy and Literature	3 s.h.
EN 674	Bibliographical Methods in English	3 s.h.
EN 676	Critical Approaches to Literature	3 s.h.
EN 692	American English Grammar	3 s.h.
EN 740	TESL/TEFL Methodology	3 s.h.
B. Literature/Linguistics Electives		12 s.h.
<i>Twelve additional semester hours, selected from the following list and approved by the director of Graduate Studies in Rhetoric and Linguistics and the director of Graduate Studies in Literature:</i>		
EN 675	Literature and the International Student	3 s.h.
EN 720	Linguistics and the English Teacher	3 s.h.
EN 721	Psycholinguistics	3 s.h.
EN 722	Sociolinguistics	3 s.h.
EN 760	Teaching College Literature	3 s.h.
EN 761	Topics in American Literature Before 1870	3 s.h.
EN 762	Topics in American Literature Since 1870	3 s.h.
EN 763	Topics in British Literature Before 1660	3 s.h.
EN 764	Topics in British Literature Since 1660	3 s.h.
EN 765	Topics in Literature as Genre	3 s.h.
EN 766	Topics in Comparative Literature	3 s.h.
EN 771	Topics in Postmodern Literature	3 s.h.
EN 772	Topics in Women's Literature	3 s.h.
EN 773	Topics in American or British Minority Literature	3 s.h.
C. Open Electives		9 s.h.
Nine additional semester hours of electives approved by the director of Graduate Studies in Rhetoric and Linguistics and by the director of Graduate Studies in		

Literature and Criticism. Up to 6 of these semester hours may be taken outside the English department. In addition, with the approval of a thesis adviser, a student may, as part of this requirement, register for from 1 to 6 hours of EN 850 Thesis.

Total Credit Hours 36 s.h.

M.A./Literature

The Master of Arts/Literature (M.A./LIT) is designed for active professionals who wish to further their expertise in literature and for students who wish to prepare for work on a Ph.D. in British and American literature and criticism. The M.A./LIT option introduces students to a wide range of critical and theoretical approaches to traditional and nontraditional literary works.

M.A./Literature Course Requirements

A. Core Courses:	6 s.h.
EN 674 Bibliographical Methods in English	3 s.h.
EN 676 Critical Approaches to Literature	3 s.h.

B. Period Courses:	12 s.h.
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EN 761 Topics in American Literature Before 1870	3 s.h.
EN 762 Topics in American Literature Since 1870	3 s.h.
EN 763 Topics in British Literature Before 1660	3 s.h.
EN 764 Topics in British Literature Since 1660	3 s.h.

C. Courses in Approaches to the Literary Canon	3 s.h.
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One course from among the following offerings:

EN 766 Topics in Comparative Literature	3 s.h.
EN 771 Topics in Postmodern Literature	3 s.h.
EN 772 Topics in Women's Literature	3 s.h.
EN 773 Topics in American or British Minority Literature	3 s.h.

D. Literature Electives	9 s.h.
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Three courses from among the following:

EN 675 Literature and the International Student	3 s.h.
EN 760 Teaching College Literature	3 s.h.
EN 761 Topics in American Literature Before 1870	3 s.h.
EN 762 Topics in American Literature Since 1870	3 s.h.
EN 763 Topics in British Literature Before 1660	3 s.h.
EN 764 Topics in British Literature Since 1660	3 s.h.
EN 765 Topics in Literature as Genre	3 s.h.
EN 766 Topics in Comparative Literature	3 s.h.
EN 771 Topics in Postmodern Literature	3 s.h.
EN 772 Topics in Women's Literature	3 s.h.
EN 773 Topics in American or British Minority Literature	3 s.h.

E. Open Electives	6 s.h.
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Six semester hours approved by the director of Graduate Studies in Literature from other graduate offerings in Literature, courses in Rhetoric and Linguistics, or courses outside the department in a related and appropriate field.

With the approval of a thesis adviser, a student may, as part of this requirement, register for from 1 to 6 hours of EN 850 Thesis.

Total Credit Hours 36 s.h.

M.A./Teaching English

The Master of Arts/Teaching English (M.A./TE) responds directly to recent national studies of teacher training. The M.A./TE program involves the study of the research on teaching literature, composition, and language, through both academic course work and supervised internship experiences. This program is for in-service secondary English teachers who wish advanced in-depth study in the teaching of English and for students with a bachelor's degree in English (or its equivalent) who wish to pursue initial certification. Students seeking initial certification through the M.A./TE degree should be aware of the 6 s.h. of student teaching required in addition to the 36 s.h. of course work. Thus the M.A./TE with initial certification will entail a total of 42 s.h. of course work and student teaching.

M.A./Teaching English Course Requirements

A. Core Courses:	18 s.h.
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EN 630 Research on the Teaching of Literacy and Literature	3 s.h.
EN 676 Critical Approaches to Literature	3 s.h.
EN 692 American English Grammar	3 s.h.
EN 693 Seminar in Teaching English in the Secondary School	3 s.h.
EN 730 Teaching Writing	3 s.h.

And one additional course from the following, approved by the director of Graduate Studies in Rhetoric and Linguistics:

EN 762 Topics in American Literature Since 1870	3 s.h.
EN 763 Topics in British Literature Before 1660	3 s.h.
EN 772 Topics in Women's Literature	3 s.h.
EN 773 Topics in American or British Minority Literature*	3 s.h.

*Students seeking initial certification should take EN 773 to assist them in preparing for the Pennsylvania Department of Education Certification Examination.

B. Electives in Teaching, Learning, and Schools	6 s.h.
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Two courses from among the following:

EL 644 Recent Trends in Language Arts	3 s.h.
EP 604 Advanced Educational Psychology	3 s.h.
EP 618 Interpretation of Educational and Psychological Tests	3 s.h.
EX 524 Language Disabilities and the Language Processes	3 s.h.
EX 650 Exceptional Children and Youth	3 s.h.
FE 611 Historical Foundations of Education	3 s.h.
FE 612 Philosophical Foundations of Education	3 s.h.
FE 613 Social Foundation of Education	3 s.h.

Students seeking initial certification as a secondary English teacher must take EX 650, EP 604, EP 618, and

FE 611, FE 612, or FE 613 to satisfy Pennsylvania Department of Education certification standards. Since this list constitutes 12 semester hours, no professional electives will remain for these students. The PDE requirement for EX 650 may be met by examination available from the Department of Special Education. Students using the examination option may take 3 semester hours of professional electives as described below.

C. Professional Electives 6 s.h.

Six semester hours to be chosen from graduate courses in the English Department or the College of Education approved by the director of Graduate Studies in Rhetoric and Linguistics after discussion with the student's adviser.

D. Professional Practice: 6 s.h.

EN 694 Observation in Teaching English 3 s.h.

EN 698 Internship 3 s.h.

Students seeking initial certification as secondary English teachers must also student teach as required by the Pennsylvania Department of Education before the director of Graduate Studies in Rhetoric and Linguistics will recommend approval for certification to the certifying officer at IUP, the dean of the College of Education.

Total Credit Hours 36 s.h.

Total Credit Hours with Initial Certification 42 s.h.

M.A./Teaching English to Speakers of Other Languages

The Master of Arts/Teaching English to Speakers of Other Languages (M.A./TESOL) is designed to prepare students to teach English as a second or foreign language within the guidelines established by TESOL. The program combines both theory and practice as well as a variety of approaches.

M.A./Teaching English to speakers of Other Languages Course Requirements

A. Core Courses: 15 s.h.

EN 641 Topics in ESL Pedagogy 3 s.h.

EN 692 American English Grammar 3 s.h.

EN 694 Observation in Teaching English 3 s.h.

EN 740 TESL/TEFL Methodology 3 s.h.

EN 742 Cross-Cultural Communication 3 s.h.

B. Internship 3 s.h.

EN 696 Internship in ESL/EFL 3 s.h.

This requirement will be waived by the director of Graduate Studies in Rhetoric and Linguistics for experienced TESL/TEFL teachers. Students receiving a waiver for EN 696 must take an additional three semester hours of open electives.

C. Program Electives 9 s.h.

Nine semester hours, approved by the director of Graduate Studies in Rhetoric and Linguistics, from the following list:

EN 720 Linguistics and the English Teacher 3 s.h.

EN 721 Psycholinguistics 3 s.h.

EN 722 Sociolinguistics 3 s.h.

EN 730 Teaching Writing 3 s.h.

EN 736 Reading Theory and the College English Teacher 3 s.h.

EN 741 ESL Materials and Media 3 s.h.

EN 743 Second Language Acquisition 3 s.h.

D. Open Electives 9 s.h.

Nine additional semester hours of electives approved by the director of Graduate Studies in Rhetoric and Linguistics. Six of these semester hours may be taken outside the English Department.

Total Credit Hours 36 s.h.

Doctor of Philosophy Programs

There are two distinct doctoral programs in English, one in Literature and Criticism and one in Rhetoric and Linguistics. Both programs lead to a Doctor of Philosophy in English.

I. Literature and Criticism

The Literature and Criticism Program's Doctor of Philosophy in English is designed for present or future teachers at the college or university level. It features both a regular academic year program and a very active summer program, designed for established teachers who wish to complete their degrees in the summers only. The program develops students' abilities to examine literature critically, to teach literature effectively, and to make professional contributions in the field. Courses emphasize the role of theory in understanding literature, and students are asked to apply theory to their teaching and research in the concluding Advanced Seminars. The Traditional Literature courses reinforce the student's understanding of historical, cultural, and intellectual contexts. The Special Literatures section mirrors the acceptance of new works in the canon. The focus on scholarly skills in the seminars and the mentoring relationships with professors assure that students will acquire a professional competence in literature and critical theory.

The Literature Program has rolling admissions throughout the year. Please note that applications are not encouraged from students who are not already employed in teaching English or who do not have prior teaching experience. Because of the limited opportunity for gaining teaching experience on campus, student classroom teaching experience as part of the degree program cannot be guaranteed.

Early in the program, each doctoral student chooses or is assigned a faculty mentor to provide guidance and advice on becoming professionally active. The main components of the program are course work, a candidacy examination (taken approximately midway in the course work), proof of a language proficiency, the completion of a research skills requirement, comprehensive examinations, and the dissertation.

A minimum of 30 hours of course work (excluding the dissertation and, for certain students, the prerequisite EN 674 Bibliographical Methods in English) is required beyond the M.A.

<i>Two core courses</i>		6 s.h.
EN 751	The History and Theory of Criticism	3 s.h.
EN 752	Literary Theory for the Teacher and Scholarly Writer	3 s.h.

Six courses may be elected from all 700-level courses in literature 18 s.h.

(At least two courses must be in Traditional Literatures)

EN 761	Topics in American Literature Before 1870	3 s.h.
EN 762	Topics in American Literature Since 1870	3 s.h.
EN 763	Topics in British Literature Before 1660	3 s.h.
EN 764	Topics in British Literature Since 1660	3 s.h.
EN 765	Topics in Literature as Genre	3 s.h.
EN 766	Topics in Comparative Literature	3 s.h.

(At least one course must be in Special Literatures)

EN 771	Topics in Postmodern Literature	3 s.h.
EN 772	Topics in Women's Literature	3 s.h.
EN 773	Topics in American or British Minority Literature	3 s.h.

Two of the three Advanced Seminars 6 s.h.

EN 783	Seminar: Literary Theory Applied to Major American Author or Theme	3 s.h.
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EN 784	Seminar: Literary Theory Applied to British Author or Theme	3 s.h.
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EN 785	Seminar: Comparative Literary Theory Applied to Traditional and Special Literature	3 s.h.
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Total 30 s.h.

The program director may permit students with particular programmatic needs to take up to 6 of the 30 hours in a closely related field such as rhetoric and linguistics, history, or philosophy.

After completing 12 to 18 hours of course work, the student must take a generalist literary essay examination for admission to candidacy and permission to take further elective courses and seminars. Candidacy depends upon satisfactory completion of this exam and the fulfillment of the Graduate School requirements of a 3.5 grade point average.

Following the completion of the 30 hours of course work, students take written comprehensive examinations in three areas (literary theory and practice as applied to a general list of authors and texts, a broadly defined area of literature, and a narrowly focused field of study), together with an oral defense of the written exams. In addition, the program requires a reading ability in a foreign language and the completion of a research skills requirement (either proficiency in a second foreign language or an additional 6 hours of graduate course work in a field related to a student's research needs). The final program requirement is the successful defense of dissertation, including registration for twelve dissertation credits.

Further and more detailed information about the program is available in the *Program Handbook*, which may be obtained from the Office of the Director, Graduate Studies in Literature and Criticism, 111 Leonard Hall, IUP, Indiana, PA 15705. Phone: (412) 357-2264; Fax (412) 357-3056. The *Handbook* is also available on the Internet: <http://www.iup.edu/en/>

II. Rhetoric and Linguistics

The Rhetoric and Linguistics track of the Doctor of Philosophy in English is designed for teachers of English in secondary schools and in two-year and four-year colleges. Different emphases in the program allow students to focus upon the native speaker of English or upon international students who are learning English as a second language. Students without demonstrable teaching experience are expected to complete an internship experience in order to demonstrate the ability to teach effectively. Students with teaching experience must file a waiver of this requirement with the director of Graduate Studies in Rhetoric and Linguistics.

After completion of 9 semester hours of course work and before completion of 15 semester hours, the Rhetoric and Linguistics Program Committee will review the student's status for admission to candidacy. Candidacy requirements include a minimum grade point average of 3.5 on a 4.0 scale. Students who have not received the M.A. from an American college or university will be required to submit TOEFL scores. The program committee may request other information it deems pertinent to review of the student for candidacy as outlined in the Rhetoric and Linguistics Program Handbook (obtainable from the director of Graduate Studies in Rhetoric and Linguistics).

After completion of course work, the student will request the assignment of a Doctoral Advisory Committee which will prepare and administer the student's comprehensive examinations and supervise the student's dissertation research. Students may request changes to the committee after completion of the comprehensive examination to allow for a more focused approach to the dissertation project.

The following courses are required of all students:

EN 710	Research Methodology in Rhetoric and Linguistics	3 s.h.
EN 720	Linguistics and the English Teacher	3 s.h.
EN 721	Psycholinguistics	3 s.h.
<i>or</i>		
EN 722	Sociolinguistics	3 s.h.
EN 730	Teaching Writing	3 s.h.

Required of all students without demonstrable teaching experience.

EN 698	Internship	3 s.h.
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Elective courses include

EN 696	Internship in ESL/EFL	3 s.h.
EN 715	Qualitative Research	3 s.h.
EN 731	The Rhetorical Tradition and the Teaching of Writing	3 s.h.

EN 732	Advanced Seminar in Composition Theory	3 s.h.
EN 736	Reading Theory and the College English Teacher	3 s.h.
EN 740	TESL/TEFL Methodology	3 s.h.
EN 741	ESL Materials and Media	3 s.h.
EN 743	Second Language Acquisition	3 s.h.

Students are encouraged to plan the remainder of their course work to help develop interdisciplinary interests. In addition to further courses in rhetoric, composition, TESOL, and applied linguistics, students are encouraged to explore literature and criticism, psychology, sociology, and communications media among disciplines available at IUP. In addition to the 30 required semester hours of course work, students must complete a research skills requirement related to the proposed dissertation project. This requirement includes options in foreign languages, computers, research methodology and design, or additional applied linguistics. (Further information on the research skills requirement may be obtained from the director of Graduate Studies in Rhetoric and Linguistics.)

Prospective applicants are encouraged to contact the director of Graduate Studies in Rhetoric and Linguistics at 111B Leonard Hall, IUP, Indiana, PA 15705 or by telephone: (412) 357-2263 or fax: (412) 357-3056.

Geography and Regional Planning

IUP's Department of Geography and Regional Planning offers graduate programs leading to the degrees of Master of Arts and Master of Science. (The M.Ed. in Geography is currently inactive, and no applications are being accepted for this program.) The M.A. and M.S. programs are designed to prepare students for a variety of careers as geographers in business, government, research, and planning organizations or for entry to a doctoral program at another university. Emphasis is placed upon developing a professional competence in the tools, substance, methodology, and theory of geography.

Graduates of the program are employed by the state and federal government, city, county, and regional planning commissions, private consultant firms, business and industry, and colleges and universities. Knowledge of major subject areas is of value to the graduate in the job search. The subject areas are spatial location patterns, environmental processes, organization and operation of the planning field, and cartographic skills, including computer applications.

Students who enter the program usually hold a bachelor's degree in geography or one of the social sciences. Persons with degrees in education, science, or business also may qualify and often find a degree in geography of value.

Geography graduate students at IUP may pursue traditional geographic themes of study or research such as economic-urban and cultural-historical geography. The department also has faculty strength in regional development and planning and in cartography/remote

sensing/geographic information systems. Thus, the student may choose between two plans. The M.A. student may design his/her program in consultation with a faculty adviser. The M.S. program requires that the student complete a twelve-credit concentration in regional development, planning, or cartography. In either program, selected courses in related fields may be applied toward the degree.

Both graduate degree programs require a minimum of 30 semester hours of credit (including the thesis credits) for the thesis option or 36 hours for the non-thesis option. Three core courses must be included: GE 610, GE 612, and GE 614. Graduate students have the option of incorporating an internship as part of the M.S. program.

Master of Arts in Geography

I. Core Program*	9 s.h.
GE 610 Research in Geography and Regional Planning	3 s.h.
GE 612 Quantitative Techniques in Geography and Planning	3 s.h.
GE 614 Thought and Philosophy in Geography and Regional Planning	3 s.h.

II. Electives and/or Thesis either

A. Thesis Option	21 s.h.
Electives in GE and related fields	15-20 s.h.
GE 850 Thesis	1-6 s.h.

or

B. Non-thesis Option	27 s.h.
Electives in GE and related fields	

Master of Science in Geography

I. Core Program*	9 s.h.
GE 610 Research in Geography and Regional Planning	3 s.h.
GE 612 Quantitative Techniques in Geography and Planning	3 s.h.
GE 614 Thought and Philosophy in Geography and Regional Planning	3 s.h.

II. Concentration 12 s.h. minimum

The candidate may take a concentration in Regional Development, Planning, or Cartography

III. Electives and/or Thesis either

A. Thesis Option	9 s.h. minimum
Electives in GE and related fields	3-9 s.h.
GE 850 Thesis	1-6 s.h.

or

B. Non-thesis Option	15 s.h.
Electives in GE and related fields	

A 3 or 6 semester-hour internship may be included as an elective in the M.S. program.

*Effective 1996-97; pending approval by Council of Trustees.

History

The Department of History offers the M.A. degree with either a 30-credit (thesis) or a 36-credit (non-thesis) option. Students must complete a research requirement and a subject matter requirement. A wide range of courses in American, European, and public history are available.

Traditionally, most historians have become teachers. But increasingly, historians are seeking employment in nonteaching fields, including careers in museum, archival, or library work or in tourism and travel. Historical societies provide editorial and administrative openings, and publishing companies hire historians for both sales and editorial services. The history graduate program is designed to provide students with training appropriate to a wide range of professional goals in the field of history.

A minimum of 30 semester hours is required, or 36 semester hours for those electing not to write a thesis. Within these general requirements is a 9-semester-hour research requirement consisting of HI 614 Research Methods (or a substitution approved by the department) and a combination of seminars and/or thesis hours. The remaining hours are selected from the subject matter courses. Six semester hours may, with approval, be from related disciplines.

Students pursuing the Public History track must complete 36 semester hours as outlined below:

I. Research requirement

HI 614	Research Methods	3 s.h.
HI 850	Thesis	6 s.h.

or

Two seminars (one with a local history focus)

II. HI 605	Introduction to Public History	3 s.h.
HI 606	Topics in Public History ¹	3 s.h.

III.	Internship	6 s.h.
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IV.	Approved electives	15 s.h.
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Failure to consult the department prior to registering for courses may delay the completion of a master's degree.

¹Under special circumstances, another appropriate course in a public history specialization may be substituted for HI 606.

Industrial and Labor Relations

The Master of Arts in Industrial and Labor Relations is a multidisciplinary graduate degree program designed to prepare professional practitioners in the field of industrial and labor relations in public and private management, unions, government agencies, and neutral and service organizations. The 42-semester-hour program consists of a required core of 27 semester hours and elective course offerings totaling 15 semester hours.

In consultation with the adviser, each student will individually build the elective sequence of the program of study by choosing 15 elective semester hours from among industrial and labor relations courses and courses approved by the adviser that are offered by other departments.

Students are strongly encouraged to elect an internship to integrate theory and practice in the field. Certain students with exceptional background in relevant work experience or previous course work may qualify for exemption from some courses. As part of their professional growth, students may also participate in the research and training activities of the Pennsylvania Center for the Study of Labor Relations.

Course Requirements for the M.A. Degree

I. Required Core: 27 s.h.

LR 610	Employee Rights under Law	3 s.h.
LR 611	Development and Theories of the Labor Movement	3 s.h.
LR 612	Labor Relations Practice and Administration	3 s.h.
LR 613	Fundamentals of American Industrial and Labor Relations	3 s.h.
LR 615	Dispute Settlement	3 s.h.
LR 619	Research Methods in Industrial and Labor Relations	3 s.h.
LR 625	Processes of Collective Bargaining	3 s.h.
LR 641	Contract Administration	3 s.h.
EC 530	Labor Economics	3 s.h.
(or approved substitute)		

II. Elective Area:

Fifteen semester hours chosen from other elective courses in industrial and labor relations or from related departments with the approval of student's adviser.

Political Science

The Political Science Department offers the M.A. in Public Affairs degree, with concentrations in Public Administration and International Affairs.

Master of Arts in Public Affairs

The M.A. in Public Affairs program is designed for full-time and part-time students who are seeking or are currently engaged in professional careers as administrators, project directors, staff analysts, and supervisors in government and human service agency delivery systems, trade unions, and interest groups; teachers of the social studies; and those interested in international and comparative studies or in becoming foreign service professionals.

The M.A. in Public Administration requires a minimum of thirty to thirty-six graduate credits, including a research or internship requirement. The entering student should have sufficient preparation in the social sciences, or in equivalent professional experiences necessary for satisfactory performance in the program. In some cases, this may require specific courses not for graduate credit. Preparatory requirements, if any, will be determined by the Political Science Department and the Graduate School and may be completed after admission to the Graduate School but prior to admission to candidacy for the degree.

Degree Requirements: Student may elect to concentrate in one of two areas:

(A) Public Administration (36 credits¹)

or

(B) International Affairs (30 credits, plus foreign language competence¹).

A. Public Administration 36 s.h. minimum¹

1. Research Methods 3 - 6 s.h. minimum

PS 674 Analytical Techniques² 3 s.h.

GR 516 Statistical Methods I¹ 3 s.h.

or

GR 517 Statistical Methods II¹

2. Required Core Courses 15 s.h.

PS 570 Introduction to Public Administration³ 3 s.h.

PS 666 Public Policy Analysis 3 s.h.

PS 668 Public Sector Financial Administration 3 s.h.

PS 671 Seminar in Public Administration³ 3 s.h.

PS 673 Regional Public Service Administration in Rural Areas 3 s.h.

or

PS 555 Intergovernmental Relations

3. Directed Research Option 3 - 6 s.h.

a. Students must complete an Internship (PS 698), including a research project for three to six credits at an internship site appropriate for their specialization. The internship will, when appropriate, be supervised by the student's specialization adviser or department designee.

or

b. A Field-Based Research Project, usually as PS 699 Independent Study, may be substituted for the internship requirement upon prior approval by the department and the M.A. in Public Administration program director. This option is generally not appropriate for the International Affairs Concentration.

or

c. Students may opt to write a thesis (PS 850).

The MAPA Directed-Research Manual may be consulted for requirements pertinent to each of these three options.

4. Specialization 15 s.h.

Students must select one of the following with advice from a subfield concentration adviser: Criminal Justice Management; Planning and Regional Development; Human Services Administration; Public Personnel Administration; Municipal Management. (See M.A. in Public Administration program for current list of required courses and additional options for specialization.)

¹If a student can demonstrate proficiency in statistics, the hours required to complete the degree will be reduced from 39 to 36, or from 33 to 30, depending on the selected concentration.

²Students may substitute another research methodology course as approved by the adviser.

³May be waived if taken as an undergraduate, in which case another course may be substituted.

B. International Affairs Concentration 30 s.h. minimum

1. Research Methods 3 - 6 s.h. minimum

PS 674 Analytical Techniques² 3 s.h.

GR 516 Statistical Methods I¹ 3 s.h.

or

GR 517 Statistical Methods II¹

2. Required Core Courses 12 s.h.

PS 670 Foreign Policy Studies 3 s.h.

PS 672 Comparative Political Studies 3 s.h.

and two of the following:

PS 520 International Law 3 s.h.

PS 521 International Organizations 3 s.h.

PS 589 Developing Nations 3 s.h.

3. Directed Research Option 3 - 6 s.h.

a. Students must complete an Internship (PS 698), including a research project for three to six credits at an internship site appropriate for their specialization. The internship will, when appropriate, be supervised by the student's specialization adviser or department designee.

or

b. A Field-Based Research Project, usually as PS 699 Independent Study, may be substituted for the internship requirement upon prior approval by the department and the M.A. in Public Administration program director. This option is generally not appropriate for the International Affairs Concentration.

or

c. Students may opt to write a thesis (PS 850).

The MAPA Directed-Research Manual may be consulted for requirements pertinent to each of these three options.

4. Specialization 12 s.h.

Students must select a specialization, with advice from a specialization adviser, from international, comparative, and public administration courses in this or other departments such as Comparative Administration, Developing Nations, and International Studies. (See director of M.A. in Public Administration program for current list of specializations and required courses.)

5. Foreign Language Reading Competency, established by examination.

¹If a student can demonstrate proficiency in statistics, the hours required to complete the degree will be reduced from 39 to 36, or from 33 to 30, depending on the selected concentration.

²Students may substitute another research methodology course as approved by the adviser.

Sociology

Advanced training in sociology should enable students to think insightfully and critically about society and human relationships and to serve more effectively in a variety of professions. The department's M.A. in Sociology prepares students for employment in human services, government agencies, corporations, higher education, and social research positions. Recent graduates are working as family counselors, alcohol treatment supervisors, domestic violence program staff, medical social workers, mental

health professionals, social policy researchers, and college professors. The M.A. in Sociology is designed to prepare students for such opportunities with two programs of study: the General Sociology Program and the Human Services Program.

In addition to Graduate School admissions requirements, the applicants to the Sociology M.A. program should have completed at least 12 hours of undergraduate social science courses with an average of "B" or better. Students not meeting this requirement may be admitted if they agree to take additional undergraduate or graduate sociology courses designated by the department.

Master of Arts in Sociology

Students select either a six-credit thesis option or a non-thesis option. Students selecting the thesis option must successfully complete a six-credit thesis (see requirements for the thesis listed under the catalog description for SO 850). Counting the six-credit thesis, the thesis option requires a total of 30 credit hours for those in the General Sociology Program and 36 hours (including a six-credit internship) for those in the Human Services Program. The non-thesis option in both programs requires a total of 36 credit hours and successful completion of a comprehensive exam.

Additional courses are available from other departments on related topics such as counseling, individual assessment, women's studies, criminology, cross-cultural studies, public policy and finance, community and urban planning, statistical analysis, and program evaluation. Up to 9 credit hours may be taken outside the department. No more than one-third of a student's total credit hours may be dual-level (500-level) courses. Students who enrolled for dual-level courses while undergraduates at IUP may not repeat the same courses for credit as graduate students.

General Sociology Program

The General Sociology Program is designed especially for those students preparing for research professions, doctoral studies, or teaching in the social sciences.

I. Required Core	9 s.h.
SO 664 Research Seminar in Sociology	3 s.h.
SO 665 Microcomputing Applications in Sociology	3 s.h.
SO 667 Contemporary Sociological Theory	3 s.h.

II. Either

A. (Thesis Option)

SO 850 Thesis	6 s.h.
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Approved electives (including at least 9 s.h. in Area of Specialization)

15 s.h.

B. (Non-thesis Option)

Approved electives (including at least 9 s.h. in Area of Specialization)	27 s.h.
Comprehensive exam	0 s.h.

III. Areas of Specialization (choose one)¹

- A. Sociology of Deviance
- B. Sociology of the Family/Sociology of the Lifecourse
- C. Medical Sociology

D. Sociology of Organizations

E. Social Stratification

F. Social Change

A specialization enables the student to select a combination of three to five courses (including courses from various other departments) focusing on a particular area of interest. Complementary courses are offered in Women's Studies, Clinical Psychology, Counselor Education, Criminology, Public Administration, Adult and Community Education, Political Science, History, and other departments or programs.

Human Services Program

The Human Services Program is designed to prepare students to work in a variety of human service fields and to offer advanced training for those already employed in human service professions. The Human Services Program is designed for those interested in service delivery to special client groups like the aging, the abused, and the alcohol dependent, or for those interested in human service administration or evaluation.

I. Required Core	15 s.h.
SO 610 Sociology of Human Services	3 s.h.
SO 611 Human Services Administration	3 s.h.
SO 664 Research Seminar in Sociology	3 s.h.
SO 665 Microcomputing Applications in Sociology	3 s.h.
SO 667 Contemporary Sociological Theory	3 s.h.
II. Internship	6 s.h.
SO 698 Internship	6 s.h.

III. Areas of Specialization (Choose one)¹

- A. Administration and Evaluation of Human Services
- B. Alcohol and Drug Abuse
- C. Health and Medicine
- D. Children and Families
- E. Aging

A specialization enables the student to select a combination of three to five courses (including courses from various other departments) focusing on a particular area of interest. Complementary courses are offered in Women's Studies, Clinical Psychology, Counselor Education, Criminology, Public Administration, Adult and Community Education, Political Science, History, and other departments or programs.

IV. Either

A. (Thesis Option)

SO 850 Thesis	6 s.h.
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Approved electives in a chosen area of specialization

9 s.h.

or

B. (Non-Thesis Option)

Approved electives including at least 9 s.h. in a chosen area of specialization²

15 s.h.

Comprehensive exam

0 s.h.

Both thesis and non-thesis options in the Human Services Program require a total of 36 credit hours.

¹Students may also design their own specialization, with the approval of the graduate coordinator

²No more than 9 of these 15 credits may be from outside the department.

College of Natural Sciences and Mathematics



The College of Natural Sciences and Mathematics at IUP offers graduate degrees in Biology (M.S.), Chemistry (M.S. and M.A.), Mathematics (M.S. and M.Ed.), Physics (M.S. and M.A.), and Clinical Psychology (Psy.D.).

Biology

Requirements for admission: To be admitted to the Department of Biology, the applicant must have completed the requirements for a bachelor's degree from an accredited college or university. These requirements should include a major in Biology, one year of inorganic chemistry, one semester of organic chemistry, and one semester of calculus or statistics. Applicants with undergraduate deficiencies may be required to register for appropriate courses.

The requirements for candidacy for the M.S. degree are

- Satisfactory completion of 15 semester hours of graduate work, with at least 8 hours in core courses.
- The selection of a thesis adviser and a committee of at least two additional faculty members (in the case of the thesis student) or a research adviser (in the case of non-thesis student) to guide the candidate in completing the program.
- An official application to candidacy, including a research proposal which has been approved by the adviser, must be submitted to the Biology Department Graduate Committee.

Candidates are expected to maintain an average not lower than 3.0. Continuance in the graduate program for those receiving two individual course grades below a "B" is

contingent upon favorable review of the Graduate Committee.

Master of Science in Biology

Students working for this degree will complete 35 semester hours of work in accordance with the following divisions. Students may pursue either a thesis or a non-thesis option.

I. Core Courses

Thesis option - 20 semester hours

Non-thesis option - 17 semester hours

A. Required Courses

Thesis option

BI 602	Biometry	11 s.h.
BI 611	Biology Seminar I	3 s.h.
BI 612	Biology Seminar II	1 s.h.
BI 850	Thesis	1 s.h.

Non-thesis option

BI 602	Biometry	8 s.h.
BI 611	Biology Seminar I	3 s.h.
BI 612	Biology Seminar II	1 s.h.
BI 699	Independent Study	1 s.h.

B. Core Elective Requirement

For both options, the 9 remaining hours of course credit are to be selected from biology electives and must include one cell/molecular course, one organismal course, and one ecology course.

II. Elective Courses

Thesis option: 15 semester hours

Non-thesis option: 18 semester hours

Courses to be selected with the approval of the adviser from the 500- and 600-level biology elective courses or from related science and mathematics courses.

III. Competency Exam

Every student must take a competency exam administered by the candidate's advisory committee. The purpose of this examination is to assure that all graduates have a broad-based knowledge of biology, as well as a mastery of their subject matter pertaining directly or indirectly to their research project.

This examination must be scheduled after completion of 18 semester hours but before completion of 27 semester hours. If a student fails this exam, a second exam will be administered which, at the discretion of the committee, can be oral or written. This exam must be taken within a four-month period following the first exam. Failure of the second exam will result in dismissal from the program.

IV. Research Requirement for the M.S.

A. Non-thesis option—The candidate must conduct an original research project under the direction of a faculty adviser. A report in the format of a journal article must be submitted at the conclusion of the study. This requirement is programmed as BI 699 Independent Study.

B. Thesis option—The candidate must conduct original research under the direction of the thesis advisory committee and present a research thesis at the conclusion of the program. The candidate registers for BI 850 Thesis, while engaged in research and preparation of the thesis. The candidate will present a public seminar, reporting results of the research, and an oral defense before the thesis committee.

In many courses in the Department of Biology, additional laboratory time may be required beyond the regularly scheduled periods.

Chemistry

The Chemistry Department offers two different degree programs on the master's level: the Master of Science and the Master of Arts degrees.

The Master of Science degree is for the chemist who intends to pursue further graduate work leading to a Ph.D. or who intends to work as a professional chemist and desires to become more competent in chemistry. This degree is research oriented, and successful completion of an experimental thesis is required. Also, two consecutive semesters of residency are required.

The Master of Arts degree is designed to meet the needs of the chemist who is currently a full-time employee of a chemical or academic institution and who wishes strengthening in those areas relevant to the professional position. The emphasis here is on course work. The student may also pursue this degree on a full-time basis.

Four core courses, one in each of the areas of inorganic, organic, analytical, and physical chemistry, are required in

the M.S. and M.A. programs.* Beyond this point, the programs separate, with the M.S. student taking more specialized work in chemistry along with an experimental research problem.

The M.A. candidate will take more specialized work in chemistry and will be encouraged to take courses outside the sciences if they are relevant to the particular area of employment.

General admissions requirements: Students should have completed one year each of general chemistry, analytical chemistry, organic chemistry, physical chemistry, general physics, and calculus. Students wishing to specialize in biochemistry should also have had an undergraduate course in biochemistry. A student deficient in the above areas of study may also be admitted provided these deficiencies are made up concurrently with the student's graduate studies.

*An exception to this is afforded the student wishing to specialize in biochemistry.

Master of Arts in Chemistry

I. Industrial/teaching experience: Before the degree of M.A. in chemistry can be granted, the applicant must have had three years of full-time employment in an approved area of chemistry. Only those years of employment after obtaining the bachelor's degree may be counted. This experience meets the university residency requirements.

II. Core Courses		14 s.h.
CH 540	Physical Chemistry	3 s.h.
CH 600	Seminar*	3 s.h.
CH 610	Inorganic Chemistry	3 s.h.
CH 620	Analytical Chemistry	3 s.h.
CH 630	Organic Chemistry	3 s.h.

III. Course Electives (10 to 16 s.h.)
Any graduate-level courses selected from the natural sciences and mathematics with the permission of the candidate's adviser. Special permission from the Chemistry Department's Graduate Committee will be required for courses outside the sciences.

IV. Thesis Requirements (0, 2, or 4 semester hours)
The student has three options:

A. Thesis not required—A total of 30 semester hours in suitable courses are acceptable.

B. No-Committee thesis (CH 850-2 s.h.)—Refer to the steps in satisfying the research requirement for submitting a "Two-Hour, No-Committee Thesis."

C. Committee thesis (CH 850-4 s.h.)—If the candidate is doing research as part of full-time employment, that research may be submitted as a thesis, provided approval is given in advance by the employer and the Chemistry Department's Graduate Committee. The candidate's employment supervisor may serve as an ex-officio member of the thesis committee.

* The M.A. candidate is not required to attend all daytime seminars but is required to present two seminars and is expected to attend the evening seminars.

Master of Science in Chemistry

1. Residence Requirements: The student shall be in residence a minimum of two consecutive semesters of full-time work. Students working as graduate assistants and/or making up deficiencies can expect to be in residence for at least two years.

either

II. For those specializing in analytical, inorganic, organic, or physical chemistry:

A. Required Courses	15 s.h.
CH 540 Physical Chemistry	3 s.h.
CH 610 Inorganic Chemistry	3 s.h.
CH 620 Analytical Chemistry	3 s.h.
CH 630 Organic Chemistry	3 s.h.

An additional 3 s.h. 600-level chemistry course selected from analytical, inorganic, organic, or physical chemistry

B. Electives 6 s.h.

The student may, with the advice and approval of the adviser, select the electives from chemistry, physics, biology, or mathematics. CH 500 Special Studies, can provide a maximum of 3 semester hours toward the 30 semester hours necessary for the degree.

or

III. For those specializing in biochemistry:

A. Required Courses	12 s.h.
CH 646 Biochemistry	3 s.h.
CH 623 Physical and Chemical Methods of Separation	3 s.h.
CH 630 Organic Chemistry	3 s.h.
BI 662 Molecular Genetics of Eukaryotes	3 s.h.

B. Electives 9 s.h., minimum

at least one of the following:

BI 553 Physiology of Plants	3 s.h.
BI 652 Microbial Physiology	3 s.h.
BI 653 Animal Physiology	3 s.h.
BI 654 Endocrinology	3 s.h.
BI 663 Immunology	3 s.h.

and any graduate courses in the natural sciences and mathematics mutually agreed upon by the student and adviser.

IV. Research and Thesis Requirements:

A. The research work must lead to an acceptable thesis, approved by the student's adviser and the supervisory committee and defended in a final oral examination.

B. Seminar—2 s.h. required in CH 600 Seminar

C. CH 690 Research for at least 3 hours

D. CH 850 Thesis 4 s.h.

To be taken during the term in which student is writing the M.S. thesis.

Mathematics

The Mathematics Department offers three graduate degrees: the Master of Science degree in Applied Mathematics, the Master of Education in Mathematics, and the Master of Education in Elementary and Middle School Mathematics Education.

Master of Science in Applied Mathematics

The M.S. program in Applied Mathematics is designed for students who plan to pursue careers in business, industry, and government. It emphasizes applied mathematics in the areas of operations research and statistics so that its graduates are highly marketable. Requirements are flexible enough to allow appropriate choices for persons preparing for employment or already employed in areas of applied mathematics, for students who will pursue further graduate work in mathematics, and even for those who are engaged in mathematics education at the secondary or postsecondary levels. Students have the option of writing a thesis or participating in an internship.

Program Requirements

I. Core Courses*	15 s.h.
MA 525 Applied Mathematical Analysis I	3 s.h.
MA 545 Programming Models in Operations Research	3 s.h.
MA 546 Probabilistic Models in Operations Research	3 s.h.
MA 563 Mathematical Statistics I	3 s.h.
MA 564 Mathematical Statistics II	3 s.h.

*Required unless comparable courses have been completed at the undergraduate level

II. Controlled Electives**	15 s.h.
MA 547 Simulation Models	3 s.h.
MA 551 Numerical Methods for Supercomputers	3 s.h.
MA 571 Linear Algebra	3 s.h.
MA 641 Differential Equations	3 s.h.
MA 643 Graphs, Networks, and Combinatorics	3 s.h.
MA 645 Nonlinear Programming Models	3 s.h.
MA 661 Advanced Sampling Theory	3 s.h.
MA 663 Nonparametric Statistics	3 s.h.
MA 665 Applied Regression Analysis	3 s.h.
MA 684 Topics in Operations Research	3 s.h.
MA 685 Topics in Statistical Methods	3 s.h.
MA 688 Problems in Applied Mathematics	3 s.h.

**At least 12 s.h. must be at the 600 level.

III. Additional Electives***

Other graduate-level mathematics courses may be selected with the approval of the student's adviser. Also, with the adviser's approval, up to 6 s.h. of graduate work may be taken in disciplines such as Chemistry, Computer Science, Economics, Finance/MIA, and Physics.

***The MS in Applied Mathematics requires a minimum of 27 s.h. of course work in addition to the research requirement listed below.

IV. Research Requirements 3-6 s.h.

Option I

MA 850 Thesis	3 s.h.
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or

Option II

MA 698 Internship	6 s.h.
Total	30-33 s.h.

FN 646	Vitamins and Minerals	3 s.h.
FN 711	Nutrition in the Life Cycle	3 s.h.
FN 743	Clinical Dietetics	3 s.h.

III. Electives 12 s.h.

Students will elect additional courses from the *IUP Graduate Catalog* with the approval of their adviser.

Total semester hours 35 s.h.

Suggested Ancillary Courses

FN 562	Advanced Experimental Foods	3 s.h.
FN 698	Internship	1-6 s.h.
AC 620	Introduction to Adult and Community Education	3 s.h.
AC 621	The Adult Learner	3 s.h.
AC 622	Program and Process Development in Adult and Community Education	3 s.h.
AC 623	Organization and Administration in Adult and Community Education	3 s.h.
AC 625	Facilitating Adult Learning	3 s.h.
EP 616	Applied Research Methods	3 s.h.
EP 715	Doctoral Seminar in Applied Educational Research	3 s.h.
GR 517	Statistical Methods II	3 s.h.
HP 510	Exercise Prescription	3 s.h.
HP 512	Physical Activity and Stress Management	3 s.h.
HP 513	Physical Activity and Aging	3 s.h.
HP 601	Sport and Society	3 s.h.
HP 632	Assessment of Human Physiological Functions	3 s.h.
LR 631	Human Resource Management in the Public Sector	3 s.h.
NU 617	Issues in Health Care	3 s.h.

Health and Physical Education

The Master of Science degree in Sport Sciences is designed to attract students from nonteaching professions as well as the teaching profession. It is discipline-oriented with provision for the student to choose between two major areas of emphasis: professional specialization and sport studies. Options for professional specialization are provided in sports management, sports information, sports media, and aquatics administration and facilities management. Options in sport studies are interdisciplinary in nature and tailored to meet individual needs and interests.

Requirements for Admission

To be admitted to the Health and Physical Education Department, the applicant must have completed the requirements for a bachelor's degree from an accredited college or university and fulfill the general requirements for admission to the Graduate School for a master's degree as discussed in this bulletin.

Requirements for Candidacy

Acceptance into the Graduate School permits a student to take course work in the department. If a student wishes to become a degree candidate, he/she must complete the application for candidacy and forward this form to the dean of Health and Human Services after having

successfully completed six hours of course work in the department.

Master of Science in Sport Sciences

Students may choose between a thesis or non-thesis curriculum depending upon individual preferences and needs.

I. Thesis Degree Requirements 30 s.h.

A. Core Courses 20-24 s.h.

HP 600	History of Philosophy of Sport	3 s.h.
HP 601	Sport and Society	3 s.h.
HP 602	Sport Psychology	3 s.h.
HP 603	Physiological Basis of Sport	3 s.h.
GR 516	Statistical Methods I	3 s.h.
GR 615	Elements of Research	3 s.h.
HP 850	Thesis	3-6 s.h.

B. Electives 6-10 s.h.

Students may, with the advice and consent of an adviser, select electives from any of the approved graduate-level courses.

II. Non-thesis Degree Requirements 36 s.h.

A. Core Courses 18 s.h.

HP 600	History of Philosophy of Sport	3 s.h.
HP 601	Sport and Society	3 s.h.
HP 602	Sport Psychology	3 s.h.
HP 603	Physiological Basis of Sport	3 s.h.
GR 516	Statistical Methods I	3 s.h.
GR 615	Elements of Research	3 s.h.

B. Electives 18 s.h.

3 s.h. from the following:

HP 631	Motor Learning	3 s.h.
HP 632	Assessment of Human Physiological Functions	3 s.h.
HP 633	Kinesiological Principles	3 s.h.
HP 634	Current Literature in Sport	3 s.h.
HP 637	Sport Facilities Management	3 s.h.
HP 680	Seminar	3 s.h.
HP 681	Special Topics	3 s.h.

In addition, the student is required to earn 15 s.h. from any approved graduate-level courses with the advice and consent of an adviser.

Nursing

The Master of Science degree in Nursing is fully accredited by the National League for Nursing and is designed to prepare the graduate for the role of nurse educator or nurse administrator and serves as a foundation for doctoral study. The nurse educator is prepared for a career in a nursing education program or a nursing staff development setting or as a patient educator. The nurse administrator is prepared for management positions in a variety of health care settings.

- On completion of the degree, the student is prepared to
- synthesize advanced knowledge and theories to support competent practice in nursing education or nursing administration
 - provide leadership which influences nursing practice and contributes to the advancement of the nursing profession
 - use advanced research knowledge and skills in the identification and resolution of nursing problems

The Adult Health Clinical Component is required of all students. It is designed as an adjunct to the study in leadership, nursing education, and nursing administration. The clinical component builds on the knowledge and skills of baccalaureate nursing education and provides for the attainment of advanced knowledge and skills of baccalaureate nursing education and provides for the attainment of advanced knowledge and related theories in nursing and their application to advanced practice. A variety of primary, secondary, and tertiary health care settings in a wide geographical area are utilized for clinical practice sites.

This forty-five credit program requires completion of the following four sets of requirements:

I. Leadership Core	18 s.h.
GR 516 Statistical Methods I	3 s.h.
NU 615 Advanced Nursing Research	3 s.h.
NU 617 Issues in Health Care	3 s.h.
NU 618 Professional Role Development	3 s.h.
NU 619 Leadership Strategies in Nursing	3 s.h.
NU 620 Theoretical Foundation for Nursing	3 s.h.
II. Adult Health Nursing	9 s.h.
NU 640 Dynamics of Health in the Adult	3 s.h.
NU 641 Nursing Management of Adults Under Stress	3 s.h.
NU 742 Adult Health Nursing Practicum	3 s.h.

III. Either

A. Education Track	12 s.h.
NU 724 Curriculum Development for Nursing Programs	3 s.h.
NU 725 Teaching Strategies for Nursing Curricula	3 s.h.
NU 726 Clinical Instruction in Nursing	3 s.h.
NU 741 Education Practicum	3 s.h.

or

B. Administration Track	12 s.h.
MG 613 Organizational Analysis	3 s.h.
NU 727 Principles of Nursing Management	3 s.h.
NU 728 Administration of Nursing Services	3 s.h.
NU 740 Administration Practicum	3 s.h.

IV. Either

A. (Thesis Option)	6 s.h.
NU 850 Thesis	

or

B. (Non-thesis Option)	3 s.h.
NU 621 Nursing Inquiry	
An approved elective	3 s.h.

As a culminating activity, the student is required to pass a written comprehensive examination which requires the student to analyze and synthesize theory, concepts, and methodologies learned over the period of study for the degree.

Safety Sciences

The Department of Safety Sciences offers a program of studies leading to a Master of Science degree in Safety Sciences. A thesis or non-thesis curriculum is available.

Students have the opportunity to choose from a wide selection of course offerings or select a specialized area. In addition, students may choose elective courses, with approval of adviser, in fields directly related to safety sciences. The program is designed for individuals with relevant experience in safety sciences and those with appropriate undergraduate preparation who are interested in pursuing careers in the profession.

Department Admission Requirements

In addition to meeting the requirements for admission to the Graduate School, a student intending to work toward a Master of Science in Safety Sciences will be required to have the following prerequisite professional preparation:

Entry-level competency in the four subdisciplines: Safety Management, Occupational Safety, Occupational Health, and Fire Protection through relevant education, documented work experience, certifications, or other means acceptable to the Safety Sciences Graduate Committee.

Relevant education would include the student's undergraduate preparation which, in general, should include a minimum of 6 semester-hour credits in each of the following: Chemistry, Physics, and Mathematics.

When the Safety Sciences Graduate Committee determines that a deficiency in work experience or relevant education exists, a student will be required to complete additional studies to eliminate the deficiency.

Master of Science in Safety Sciences

All students are required to take a total of 36 hours, of which 18 hours are core courses. The student must choose the remaining 18 hours in a specialized or generalized option. Students may choose between a thesis or non-thesis curriculum.

I. Required Core Courses	18 s.h.
SA 601 Concepts of Risk Assessment	3 s.h.
SA 602 Quantitative Methods in Safety Management	3 s.h.
SA 603 Human Relations in Safety Management	3 s.h.
SA 604 Industrial Toxicology	3 s.h.
SA 605 Advanced Principles of Safety Engineering	3 s.h.
SA 606 Hazardous Materials Management	3 s.h.
II. Additional Requirements	18 s.h.

A. Thesis Option

- (1) SA 850 Thesis 3-6 s.h.
and (2) or (3) specified below:
(2) Electives, Specialized Option:
At least two courses chosen from list of
Safety Elective Courses (see below) 6-9 s.h. minimum
Approved electives 6 s.h.

(3) Electives, Generalist Option:

- At least four courses, one in each
subdiscipline, from list of
Safety Elective Courses (see below) 12 s.h. minimum
Approved electives 0-3 s.h.

B. Non-thesis Option 18 s.h.

(1) Electives, Specialized Option:

- Two courses in one chosen subdiscipline from list of
Safety Elective Courses (see below) 6 s.h.
Approved electives 12 s.h.

or

(2) Electives, Generalist Option:

- Four courses, one in each subdiscipline, from list of
Safety Elective Courses (see below) 12 s.h.
Approved electives 6 s.h.

Safety Elective Courses

SA 541 Accident Investigation	3 s.h.
SA 561 Air Pollution	3 s.h.
SA 562 Radiological Health	3 s.h.
SA 620 Safety Data Management	3 s.h.
SA 623 Advanced Safety Administration	3 s.h.
SA 643 Construction Safety	3 s.h.
SA 663 Industrial Hygiene Laboratory Methods	3 s.h.
SA 672 Process Safety in the Chemical Industries	3 s.h.
SA 673 Disaster Preparedness	3 s.h.
SA 674 Fire Safety in Building Design	3 s.h.

College of Humanities and Social Sciences



The College of Humanities and Social Sciences offers master's degrees in Criminology, English, Geography and Regional Planning, History, Industrial and Labor Relations, Political Science, and Sociology. Doctorates are awarded in Criminology and in English (Literature and Criticism, Rhetoric and Linguistics).

Criminology

The Department of Criminology offers a program of study leading to a Master of Arts and a Doctor of Philosophy degree in Criminology. The programs are designed to prepare graduate students for careers in academia as well as upper-level administrative positions in various fields of justice. The programs allow the student to choose from a wide selection of courses within the Department of Criminology as well as elective courses in related departments.

The Master of Arts program is offered in two locations. The M.A. program on the main campus offers full-time or part-time study. A part-time evening program is also offered in the greater Pittsburgh area. The doctoral program is offered on the main campus; full-time or part-time study is permitted.

Master of Arts in Criminology Department Admission Requirements

In addition to meeting the requirements for admission to the Graduate School, a student intending to work toward a Master of Arts in Criminology will be required to have the

following prerequisite academic and/or professional preparation:

- A. Students should be able to demonstrate a sound understanding of criminological theory and the criminal justice system (generally satisfied by a bachelor's degree in criminology, criminal justice, or related field); or,
- B. Students should have knowledge gained through experience within the system of justice system or by specialized training or completed graduate or undergraduate studies in a related field.*

*All applicants for the Master of Arts degree in Criminology must possess the essence of knowledge offered in the undergraduate (B.A.) program core courses. These courses are

- CR 102 Survey of Criminology
- CR 210 Criminal Law
- CR 300 Theory of Complex Criminal Justice Organizations
- CR 306 Criminological Research Methods
- CR 400 Theoretical Criminology
- CR 401 Contemporary Issues in Criminology

If, upon the consideration of the Department of Criminology Graduate Committee, an applicant is deemed to be deficient, the department, through the master's coordinator, will require appropriate undergraduate courses to remove these deficiencies. Students may begin master's studies in either semester or the summer.

Master of Arts in Criminology

Students must choose between a thesis or no-thesis curriculum:

Thesis Degree Requirements—A total of 36 semester hours is required, including:

CR 600	Criminological Theory	3 s.h.
CR 601	Proseminar	3 s.h.
CR 605	Research Methods	3 s.h.
CR 610	Legal Issues in Criminology	3 s.h.
CR 630	Seminar in Administration and Management in Criminal Justice	3 s.h.
CR 631	System Dynamics in the Administration of Justice	3 s.h.
CR 718	Quantitative Strategies for Criminology	3 s.h.
CR 730	Ethical and Philosophical Issues in Criminology	3 s.h.
CR 849	Comprehensive Examination	0 s.h.
CR 850	Thesis	3-6 s.h.
Electives		6 s.h.
Total		36 s.h.

No-Thesis Degree Requirements—A total of 36 semester hours is required, including:

CR 600	Criminological Theory	3 s.h.
CR 601	Proseminar	3 s.h.
CR 605	Research Methods	3 s.h.
CR 610	Legal Issues in Criminology	3 s.h.
CR 630	Seminar in Administration and Management in Criminal Justice	3 s.h.
CR 631	System Dynamics in the Administration of Justice	3 s.h.
CR 718	Quantitative Strategies for Criminology	3 s.h.
CR 730	Ethical and Philosophical Issues in Criminology	3 s.h.
CR 849	Comprehensive Examination	0 s.h.
Electives		12 s.h.
Total		36 s.h.

Doctor of Philosophy in Criminology

Department Admission Requirements

It is expected that most students entering the Ph.D. program in Criminology will have already completed a master's degree in either Criminology or a closely related discipline. However, in select cases, a highly qualified applicant may enter the doctoral track only with a baccalaureate degree. Such students would obtain the M.A. degree enroute to the Ph.D.

Applicants must meet all Graduate School admission requirements. Additionally, the doctoral coordinator, after consulting with the department screening committee, will submit a recommendation regarding applicants to the Graduate School. The following criteria are reviewed:

1. all college transcripts
2. three letters of recommendation
3. statement of goals
4. example of written work (thesis, articles, reports, etc.)
5. GRE scores (a combined score of 900 on the verbal and quantitative sections is expected. Some flexibility

may be granted at the discretion of the screening committee.)

6. skill requirement (foreign language, computer or statistical ability, or other skills approved by the screening committee or the department's graduate curriculum committee)
7. personal interview (may be requested by department screening committee or by applicant)

Deficiencies in the skill requirement may be satisfied after admission. The screening committee may request an interview with the applicant, or such may be initiated by the applicant. Students may begin doctoral studies in either semester or in some cases during the summer.

Curriculum

The Ph.D. program in Criminology is designed to be completed in approximately three calendar years of full-time study beyond the master's. The curriculum requires a minimum of 54 semester hours of acceptable graduate credit. Each student must complete requirements for (a) course work; (b) special proficiency requirements; (c) comprehensive examinations; (d) skill requirement, if needed; and (e) dissertation.

A. Required Course Work

1. Core Courses (21 semester hours):

CR 710	Advanced Theoretical Criminology	3 s.h.
CR 717	Advanced Qualitative Methods	3 s.h.
CR 718	Quantitative Strategies for Analysis in Criminology	3 s.h.
CR 720	Advanced Quantitative Methods	3 s.h.
CR 730	Ethical and Philosophical Issues in Criminology	3 s.h.
CR 740	Advanced Criminal Justice Policy	3 s.h.
CR 750	Doctoral Colloquium in Criminology	3 s.h.

2. Criminology Electives: 6 semester hours minimum

3. Advanced Applied Research: 9 semester hours minimum

4. Other Electives: 6 semester hours from Criminology or related disciplines

B. Qualifying Examination: Upon completion of the core courses a student must arrange with the doctoral coordinator to take the qualifying examination to be based upon the core subject areas. After successful completion, a student may proceed toward fulfillment of remaining degree requirements.

C. Special Proficiency Examination: Areas of Concentration—Each student must decide upon one subspecialty within Criminology. Upon consultation with the student, the student's advisory committee, and the doctoral coordinator, a proficiency exam will be administered.

D. Skill requirement: (0-6 semester hours) A deficiency in this area may be remedied by completing one of the following alternatives:

- foreign language competency
- computer language skills
- advanced competency in statistics
- other appropriate courses/subjects as approved by the doctoral coordinator

Further details regarding any of these skill requirements can be obtained from the doctoral coordinator.

E. Dissertation: In accordance with university guidelines, successful completion of a doctoral dissertation is required (12 semester hours).

Residency

The following options are available to doctoral students for satisfying residency requirements:

1. completion of a minimum of nine graduate credits at IUP in each of at least two consecutive semesters
2. completion of a minimum of nine graduate credits at IUP for at least one semester immediately preceding or following a summer of 9 semester hours of study
3. completion at IUP of at least nine graduate credits in each of two consecutive summers plus six graduate credits during the intervening academic year

Part-Time Study

This program may admit each year some students whose intention is to complete the program on a part-time basis. Course offerings can be expected to fluctuate, especially in the expansion of new course offerings. A complete and updated description of any changes can be obtained from the Department of Criminology.

English

Master of Arts in English

The M.A. in English, revised in 1989, responds to the needs of four groups of students: those interested in gaining a generalist background in graduate English studies, students wanting to concentrate on literature, students seeking secondary English certification or desiring to enhance their existing skills in teaching English, and students concerned with teaching English to speakers of other languages. Each of the four options for the M.A. requires 36 credit hours, either of course work (twelve courses) or a combination of course work and an internship or thesis. Each option has its own set of requirements for distributing those 36 hours, and each has its own admissions committee. When you apply for admission, you must indicate which degree option you wish to pursue.

The generalist (M.A./GEN) option is designed for students who wish course work in several areas of English to attain a balanced background in the discipline and gain preparation for more advanced doctoral work, for teaching at the community-college level, or for a career in such professional fields as publishing or translation. The literature (M.A./LIT) option is for active professionals who wish to further their expertise in literature and for students who wish to prepare for work on a Ph.D. in British and American literature and criticism. The teaching English (M.A./TE) option is for in-service secondary English teachers who wish advanced in-depth study in the teaching of English and for students with the bachelor's degree in English (or its equivalent) who wish to pursue initial certification. The M.A./TESOL option

prepares students in the theory and practice of teaching English to speakers of other languages in a variety of settings within (ESL) and outside (EFL) the United States.

IUP's M.A. in English has courses available in active summer sessions and during the academic year. As there is no specific residency requirement for the M.A. at IUP, students are not required to attend the program full time during the academic year; much of the work may be accomplished over the course of several summers—although certain courses required in several of the programs are offered only during the normal academic year. Students attending full time can complete the M.A. in English in as little as a single year or may spread their work out over two or three years. Thus, the M.A. in English at IUP offers the advantages of both professional focus and personal flexibility.

M.A. Program Descriptions

M.A./Generalist

The Master of Arts/Generalist (M.A./GEN) option is for students who wish course work in several areas of English. This track provides preparation for more advanced doctoral work, for teaching at the community-college level, or for careers in such professional fields as publishing or translation.

M.A./Generalist Course Requirements

A. Core Courses		15 s.h.
EN 630	Research on the Teaching of Literacy and Literature	3 s.h.
EN 674	Bibliographical Methods in English	3 s.h.
EN 676	Critical Approaches to Literature	3 s.h.
EN 692	American English Grammar	3 s.h.
EN 740	TESL/TEFL Methodology	3 s.h.
B. Literature/Linguistics Electives		12 s.h.
<i>Twelve additional semester hours, selected from the following list and approved by the director of Graduate Studies in Rhetoric and Linguistics and the director of Graduate Studies in Literature:</i>		
EN 675	Literature and the International Student	3 s.h.
EN 720	Linguistics and the English Teacher	3 s.h.
EN 721	Psycholinguistics	3 s.h.
EN 722	Sociolinguistics	3 s.h.
EN 760	Teaching College Literature	3 s.h.
EN 761	Topics in American Literature Before 1870	3 s.h.
EN 762	Topics in American Literature Since 1870	3 s.h.
EN 763	Topics in British Literature Before 1660	3 s.h.
EN 764	Topics in British Literature Since 1660	3 s.h.
EN 765	Topics in Literature as Genre	3 s.h.
EN 766	Topics in Comparative Literature	3 s.h.
EN 771	Topics in Postmodern Literature	3 s.h.
EN 772	Topics in Women's Literature	3 s.h.
EN 773	Topics in American or British Minority Literature	3 s.h.
C. Open Electives		9 s.h.
Nine additional semester hours of electives approved by the director of Graduate Studies in Rhetoric and Linguistics and by the director of Graduate Studies in		

Literature and Criticism. Up to 6 of these semester hours may be taken outside the English department. In addition, with the approval of a thesis adviser, a student may, as part of this requirement, register for from 1 to 6 hours of EN 850 Thesis.

Total Credit Hours 36 s.h.

M.A./Literature

The Master of Arts/Literature (M.A./LIT) is designed for active professionals who wish to further their expertise in literature and for students who wish to prepare for work on a Ph.D. in British and American literature and criticism. The M.A./LIT option introduces students to a wide range of critical and theoretical approaches to traditional and nontraditional literary works.

M.A./Literature Course Requirements

A. Core Courses: 6 s.h.
EN 674 Bibliographical Methods in English 3 s.h.
EN 676 Critical Approaches to Literature 3 s.h.

B. Period Courses: 12 s.h.

EN 761 Topics in American Literature Before 1870 3 s.h.

EN 762 Topics in American Literature Since 1870 3 s.h.

EN 763 Topics in British Literature Before 1660 3 s.h.

EN 764 Topics in British Literature Since 1660 3 s.h.

C. Courses in Approaches to the Literary Canon 3 s.h.

One course from among the following offerings:

EN 766 Topics in Comparative Literature 3 s.h.

EN 771 Topics in Postmodern Literature 3 s.h.

EN 772 Topics in Women's Literature 3 s.h.

EN 773 Topics in American or British Minority Literature 3 s.h.

D. Literature Electives 9 s.h.

Three courses from among the following:

EN 675 Literature and the International Student 3 s.h.

EN 760 Teaching College Literature 3 s.h.

EN 761 Topics in American Literature Before 1870 3 s.h.

EN 762 Topics in American Literature Since 1870 3 s.h.

EN 763 Topics in British Literature Before 1660 3 s.h.

EN 764 Topics in British Literature Since 1660 3 s.h.

EN 765 Topics in Literature as Genre 3 s.h.

EN 766 Topics in Comparative Literature 3 s.h.

EN 771 Topics in Postmodern Literature 3 s.h.

EN 772 Topics in Women's Literature 3 s.h.

EN 773 Topics in American or British Minority Literature 3 s.h.

E. Open Electives 6 s.h.

Six semester hours approved by the director of Graduate Studies in Literature from other graduate offerings in Literature, courses in Rhetoric and Linguistics, or courses outside the department in a related and appropriate field.

With the approval of a thesis adviser, a student may, as part of this requirement, register for from 1 to 6 hours of EN 850 Thesis.

Total Credit Hours 36 s.h.

M.A./Teaching English

The Master of Arts/Teaching English (M.A./TE) responds directly to recent national studies of teacher training. The M.A./TE program involves the study of the research on teaching literature, composition, and language, through both academic course work and supervised internship experiences. This program is for in-service secondary English teachers who wish advanced in-depth study in the teaching of English and for students with a bachelor's degree in English (or its equivalent) who wish to pursue initial certification. Students seeking initial certification through the M.A./TE degree should be aware of the 6 s.h. of student teaching required in addition to the 36 s.h. of course work. Thus the M.A./TE with initial certification will entail a total of 42 s.h. of course work and student teaching.

M.A./Teaching English Course Requirements

A. Core Courses: 18 s.h.

EN 630 Research on the Teaching of Literacy and Literature 3 s.h.

EN 676 Critical Approaches to Literature 3 s.h.

EN 692 American English Grammar 3 s.h.

EN 693 Seminar in Teaching English in the Secondary School 3 s.h.

EN 730 Teaching Writing 3 s.h.

And one additional course from the following, approved by the director of Graduate Studies in Rhetoric and Linguistics:

EN 762 Topics in American Literature Since 1870 3 s.h.

EN 763 Topics in British Literature Before 1660 3 s.h.

EN 772 Topics in Women's Literature 3 s.h.

EN 773 Topics in American or British Minority Literature* 3 s.h.

*Students seeking initial certification should take EN 773 to assist them in preparing for the Pennsylvania Department of Education Certification Examination.

B. Electives in Teaching, Learning, and Schools 6 s.h.

Two courses from among the following:

EL 644 Recent Trends in Language Arts 3 s.h.

EP 604 Advanced Educational Psychology 3 s.h.

EP 618 Interpretation of Educational and Psychological Tests 3 s.h.

EX 524 Language Disabilities and the Language Processes 3 s.h.

EX 650 Exceptional Children and Youth 3 s.h.

FE 611 Historical Foundations of Education 3 s.h.

FE 612 Philosophical Foundations of Education 3 s.h.

FE 613 Social Foundation of Education 3 s.h.

Students seeking initial certification as a secondary English teacher must take EX 650, EP 604, EP 618, and

FE 611, FE 612, or FE 613 to satisfy Pennsylvania Department of Education certification standards. Since this list constitutes 12 semester hours, no professional electives will remain for these students. The PDE requirement for EN 650 may be met by examination available from the Department of Special Education. Students using the examination option may take 3 semester hours of professional electives as described below.

C. Professional Electives 6 s.h.

Six semester hours to be chosen from graduate courses in the English Department or the College of Education approved by the director of Graduate Studies in Rhetoric and Linguistics after discussion with the student's adviser.

D. Professional Practice: 6 s.h.

EN 694	Observation in Teaching English	3 s.h.
EN 698	Internship	3 s.h.

Students seeking initial certification as secondary English teachers must also student teach as required by the Pennsylvania Department of Education before the director of Graduate Studies in Rhetoric and Linguistics will recommend approval for certification to the certifying officer at IUP, the dean of the College of Education.

Total Credit Hours 36 s.h.

Total Credit Hours with Initial Certification 42 s.h.

M.A./Teaching English to Speakers of Other Languages

The Master of Arts/Teaching English to Speakers of Other Languages (M.A./TESOL) is designed to prepare students to teach English as a second or foreign language within the guidelines established by TESOL. The program combines both theory and practice as well as a variety of approaches.

M.A./Teaching English to speakers of Other Languages Course Requirements

A. Core Courses: 15 s.h.

EN 641	Topics in ESL Pedagogy	3 s.h.
EN 692	American English Grammar	3 s.h.
EN 694	Observation in Teaching English	3 s.h.
EN 740	TESL/TEFL Methodology	3 s.h.
EN 742	Cross-Cultural Communication	3 s.h.

B. Internship 3 s.h.

EN 696	Internship in ESL/EFL	3 s.h.
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This requirement will be waived by the director of Graduate Studies in Rhetoric and Linguistics for experienced TESL/TEFL teachers. Students receiving a waiver for EN 696 must take an additional three semester hours of open electives.

C. Program Electives 9 s.h.

Nine semester hours, approved by the director of Graduate Studies in Rhetoric and Linguistics, from the following list:

EN 720	Linguistics and the English Teacher	3 s.h.
EN 721	Psycholinguistics	3 s.h.
EN 722	Sociolinguistics	3 s.h.

EN 730	Teaching Writing	3 s.h.
EN 736	Reading Theory and the College English Teacher	3 s.h.
EN 741	ESL Materials and Media	3 s.h.
EN 743	Second Language Acquisition	3 s.h.

D. Open Electives 9 s.h.

Nine additional semester hours of electives approved by the director of Graduate Studies in Rhetoric and Linguistics. Six of these semester hours may be taken outside the English Department.

Total Credit Hours 36 s.h.

Doctor of Philosophy Programs

There are two distinct doctoral programs in English, one in Literature and Criticism and one in Rhetoric and Linguistics. Both programs lead to a Doctor of Philosophy in English.

I. Literature and Criticism

The Literature and Criticism Program's Doctor of Philosophy in English is designed for present or future teachers at the college or university level. It features both a regular academic year program and a very active summer program, designed for established teachers who wish to complete their degrees in the summers only. The program develops students' abilities to examine literature critically, to teach literature effectively, and to make professional contributions in the field. Courses emphasize the role of theory in understanding literature, and students are asked to apply theory to their teaching and research in the concluding Advanced Seminars. The Traditional Literature courses reinforce the student's understanding of historical, cultural, and intellectual contexts. The Special Literatures section mirrors the acceptance of new works in the canon. The focus on scholarly skills in the seminars and the mentoring relationships with professors assure that students will acquire a professional competence in literature and critical theory.

The Literature Program has rolling admissions throughout the year. Please note that applications are not encouraged from students who are not already employed in teaching English or who do not have prior teaching experience. Because of the limited opportunity for gaining teaching experience on campus, student classroom teaching experience as part of the degree program cannot be guaranteed.

Early in the program, each doctoral student chooses or is assigned a faculty mentor to provide guidance and advice on becoming professionally active. The main components of the program are course work, a candidacy examination (taken approximately midway in the course work), proof of a language proficiency, the completion of a research skills requirement, comprehensive examinations, and the dissertation.

A minimum of 30 hours of course work (excluding the dissertation and, for certain students, the prerequisite EN 674 Bibliographical Methods in English) is required beyond the M.A.

<i>Two core courses</i>		6 s.h.
EN 751	The History and Theory of Criticism	3 s.h.
EN 752	Literary Theory for the Teacher and Scholarly Writer	3 s.h.
<i>Six courses may be elected from all 700-level courses in literature 18 s.h.</i>		
<i>(At least two courses must be in Traditional Literatures)</i>		
EN 761	Topics in American Literature Before 1870	3 s.h.
EN 762	Topics in American Literature Since 1870	3 s.h.
EN 763	Topics in British Literature Before 1660	3 s.h.
EN 764	Topics in British Literature Since 1660	3 s.h.
EN 765	Topics in Literature as Genre	3 s.h.
EN 766	Topics in Comparative Literature	3 s.h.
<i>(At least one course must be in Special Literatures)</i>		
EN 771	Topics in Postmodern Literature	3 s.h.
EN 772	Topics in Women's Literature	3 s.h.
EN 773	Topics in American or British Minority Literature	3 s.h.
Two of the three Advanced Seminars		6 s.h.
EN 783	Seminar: Literary Theory Applied to Major American Author or Theme	3 s.h.
EN 784	Seminar: Literary Theory Applied to British Author or Theme	3 s.h.
EN 785	Seminar: Comparative Literary Theory Applied to Traditional and Special Literature	3 s.h.
Total		30 s.h.

The program director may permit students with particular programmatic needs to take up to 6 of the 30 hours in a closely related field such as rhetoric and linguistics, history, or philosophy.

After completing 12 to 18 hours of course work, the student must take a generalist literary essay examination for admission to candidacy and permission to take further elective courses and seminars. Candidacy depends upon satisfactory completion of this exam and the fulfillment of the Graduate School requirements of a 3.5 grade point average.

Following the completion of the 30 hours of course work, students take written comprehensive examinations in three areas (literary theory and practice as applied to a general list of authors and texts, a broadly defined area of literature, and a narrowly focused field of study), together with an oral defense of the written exams. In addition, the program requires a reading ability in a foreign language and the completion of a research skills requirement (either proficiency in a second foreign language or an additional 6 hours of graduate course work in a field related to a student's research needs). The final program requirement is the successful defense of dissertation, including registration for twelve dissertation credits.

Further and more detailed information about the program is available in the *Program Handbook*, which may be obtained from the Office of the Director, Graduate Studies in Literature and Criticism, 111 Leonard Hall, IUP, Indiana, PA 15705. Phone: (412) 357-2264; Fax (412) 357-3056. The *Handbook* is also available on the Internet: <http://www.iup.edu/en/>

II. Rhetoric and Linguistics

The Rhetoric and Linguistics track of the Doctor of Philosophy in English is designed for teachers of English in secondary schools and in two-year and four-year colleges. Different emphases in the program allow students to focus upon the native speaker of English or upon international students who are learning English as a second language. Students without demonstrable teaching experience are expected to complete an internship experience in order to demonstrate the ability to teach effectively. Students with teaching experience must file a waiver of this requirement with the director of Graduate Studies in Rhetoric and Linguistics.

After completion of 9 semester hours of course work and before completion of 15 semester hours, the Rhetoric and Linguistics Program Committee will review the student's status for admission to candidacy. Candidacy requirements include a minimum grade point average of 3.5 on a 4.0 scale. Students who have not received the M.A. from an American college or university will be required to submit TOEFL scores. The program committee may request other information it deems pertinent to review of the student for candidacy as outlined in the Rhetoric and Linguistics Program Handbook (obtainable from the director of Graduate Studies in Rhetoric and Linguistics).

After completion of course work, the student will request the assignment of a Doctoral Advisory Committee which will prepare and administer the student's comprehensive examinations and supervise the student's dissertation research. Students may request changes to the committee after completion of the comprehensive examination to allow for a more focused approach to the dissertation project.

The following courses are required of all students:

EN 710	Research Methodology in Rhetoric and Linguistics	3 s.h.
EN 720	Linguistics and the English Teacher	3 s.h.
EN 721	Psycholinguistics	3 s.h.
<i>or</i>		
EN 722	Sociolinguistics	3 s.h.
EN 730	Teaching Writing	3 s.h.

Required of all students without demonstrable teaching experience.

EN 698	Internship	3 s.h.
Elective courses include		
EN 696	Internship in ESL/EFL	3 s.h.
EN 715	Qualitative Research	3 s.h.
EN 731	The Rhetorical Tradition and the Teaching of Writing	3 s.h.

EN 732	Advanced Seminar in Composition Theory	3 s.h.
EN 736	Reading Theory and the College English Teacher	3 s.h.
EN 740	TESL/TEFL Methodology	3 s.h.
EN 741	ESL Materials and Media	3 s.h.
EN 743	Second Language Acquisition	3 s.h.

Students are encouraged to plan the remainder of their course work to help develop interdisciplinary interests. In addition to further courses in rhetoric, composition, TESOL, and applied linguistics, students are encouraged to explore literature and criticism, psychology, sociology, and communications media among disciplines available at IUP. In addition to the 30 required semester hours of course work, students must complete a research skills requirement related to the proposed dissertation project. This requirement includes options in foreign languages, computers, research methodology and design, or additional applied linguistics. (Further information on the research skills requirement may be obtained from the director of Graduate Studies in Rhetoric and Linguistics.)

Prospective applicants are encouraged to contact the director of Graduate Studies in Rhetoric and Linguistics at 111B Leonard Hall, IUP, Indiana, PA 15705 or by telephone: (412) 357-2263 or fax: (412) 357-3056.

Geography and Regional Planning

IUP's Department of Geography and Regional Planning offers graduate programs leading to the degrees of Master of Arts and Master of Science. (The M.Ed. in Geography is currently inactive, and no applications are being accepted for this program.) The M.A. and M.S. programs are designed to prepare students for a variety of careers as geographers in business, government, research, and planning organizations or for entry to a doctoral program at another university. Emphasis is placed upon developing a professional competence in the tools, substance, methodology, and theory of geography.

Graduates of the program are employed by the state and federal government, city, county, and regional planning commissions, private consultant firms, business and industry, and colleges and universities. Knowledge of major subject areas is of value to the graduate in the job search. The subject areas are spatial location patterns, environmental processes, organization and operation of the planning field, and cartographic skills, including computer applications.

Students who enter the program usually hold a bachelor's degree in geography or one of the social sciences. Persons with degrees in education, science, or business also may qualify and often find a degree in geography of value.

Geography graduate students at IUP may pursue traditional geographic themes of study or research such as economic-urban and cultural-historical geography. The department also has faculty strength in regional development and planning and in cartography/remote

sensing/geographic information systems. Thus, the student may choose between two plans. The M.A. student may design his/her program in consultation with a faculty adviser. The M.S. program requires that the student complete a twelve-credit concentration in regional development, planning, or cartography. In either program, selected courses in related fields may be applied toward the degree.

Both graduate degree programs require a minimum of 30 semester hours of credit (including the thesis credits) for the thesis option or 36 hours for the non-thesis option. Three core courses must be included: GE 610, GE 612, and GE 614. Graduate students have the option of incorporating an internship as part of the M.S. program.

Master of Arts in Geography

I. Core Program*		9 s.h.
GE 610	Research in Geography and Regional Planning	3 s.h.
GE 612	Quantitative Techniques in Geography and Planning	3 s.h.
GE 614	Thought and Philosophy in Geography and Regional Planning	3 s.h.

II. Electives and/or Thesis

either

A. Thesis Option		21 s.h.
Electives in GE and related fields		15-20 s.h.
GE 850	Thesis	1-6 s.h.

or

B. Non-thesis Option

Electives in GE and related fields		27 s.h.
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Master of Science in Geography

I. Core Program*		9 s.h.
GE 610	Research in Geography and Regional Planning	3 s.h.
GE 612	Quantitative Techniques in Geography and Planning	3 s.h.
GE 614	Thought and Philosophy in Geography and Regional Planning	3 s.h.

II. Concentration 12 s.h. minimum

The candidate may take a concentration in Regional Development, Planning, or Cartography

III. Electives and/or Thesis

either

A. Thesis Option		9 s.h. minimum
Electives in GE and related fields		3-9 s.h.
GE 850	Thesis	1-6 s.h.

or

B. Non-thesis Option

Electives in GE and related fields		15 s.h.
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A 3 or 6 semester-hour internship may be included as an elective in the M.S. program.

*Effective 1996-97; pending approval by Council of Trustees.

History

The Department of History offers the M.A. degree with either a 30-credit (thesis) or a 36-credit (non-thesis) option. Students must complete a research requirement and a subject matter requirement. A wide range of courses in American, European, and public history are available.

Traditionally, most historians have become teachers. But increasingly, historians are seeking employment in nonteaching fields, including careers in museum, archival, or library work or in tourism and travel. Historical societies provide editorial and administrative openings, and publishing companies hire historians for both sales and editorial services. The history graduate program is designed to provide students with training appropriate to a wide range of professional goals in the field of history.

A minimum of 30 semester hours is required, or 36 semester hours for those electing not to write a thesis. Within these general requirements is a 9-semester-hour research requirement consisting of HI 614 Research Methods (or a substitution approved by the department) and a combination of seminars and/or thesis hours. The remaining hours are selected from the subject matter courses. Six semester hours may, with approval, be from related disciplines.

Students pursuing the Public History track must complete 36 semester hours as outlined below:

I. Research requirement

HI 614 Research Methods	3 s.h.
HI 850 Thesis	6 s.h.

or

Two seminars (one with a local history focus)

II. HI 605 Introduction to Public History	3 s.h.
HI 606 Topics in Public History ¹	3 s.h.

III. Internship	6 s.h.
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IV. Approved electives	15 s.h.
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Failure to consult the department prior to registering for courses may delay the completion of a master's degree.

¹Under special circumstances, another appropriate course in a public history specialization may be substituted for HI 606.

Industrial and Labor Relations

The Master of Arts in Industrial and Labor Relations is a multidisciplinary graduate degree program designed to prepare professional practitioners in the field of industrial and labor relations in public and private management, unions, government agencies, and neutral and service organizations. The 42-semester-hour program consists of a required core of 27 semester hours and elective course offerings totaling 15 semester hours.

In consultation with the adviser, each student will individually build the elective sequence of the program of study by choosing 15 elective semester hours from among industrial and labor relations courses and courses approved by the adviser that are offered by other departments.

Students are strongly encouraged to elect an internship to integrate theory and practice in the field. Certain students with exceptional background in relevant work experience or previous course work may qualify for exemption from some courses. As part of their professional growth, students may also participate in the research and training activities of the Pennsylvania Center for the Study of Labor Relations.

Course Requirements for the M.A. Degree

I. Required Core:		27 s.h.
LR 610	Employee Rights under Law	3 s.h.
LR 611	Development and Theories of the Labor Movement	3 s.h.
LR 612	Labor Relations Practice and Administration	3 s.h.
LR 613	Fundamentals of American Industrial and Labor Relations	3 s.h.
LR 615	Dispute Settlement	3 s.h.
LR 619	Research Methods in Industrial and Labor Relations	3 s.h.
LR 625	Processes of Collective Bargaining	3 s.h.
LR 641	Contract Administration	3 s.h.
EC 530	Labor Economics	3 s.h.
(or approved substitute)		

II. Elective Area:

Fifteen semester hours chosen from other elective courses in industrial and labor relations or from related departments with the approval of student's adviser.

Political Science

The Political Science Department offers the M.A. in Public Affairs degree, with concentrations in Public Administration and International Affairs.

Master of Arts in Public Affairs

The M.A. in Public Affairs program is designed for full-time and part-time students who are seeking or are currently engaged in professional careers as administrators, project directors, staff analysts, and supervisors in government and human service agency delivery systems, trade unions, and interest groups; teachers of the social studies; and those interested in international and comparative studies or in becoming foreign service professionals.

The M.A. in Public Administration requires a minimum of thirty to thirty-six graduate credits, including a research or internship requirement. The entering student should have sufficient preparation in the social sciences, or in equivalent professional experiences necessary for satisfactory performance in the program. In some cases, this may require specific courses not for graduate credit. Preparatory requirements, if any, will be determined by the Political Science Department and the Graduate School and may be completed after admission to the Graduate School but prior to admission to candidacy for the degree.

Degree Requirements: Student may elect to concentrate in one of two areas:

(A) Public Administration (36 credits¹)

or

(B) International Affairs (30 credits, plus foreign language competence¹).

A. Public Administration 36 s.h. minimum¹

1. Research Methods 3 - 6 s.h. minimum

PS 674 Analytical Techniques² 3 s.h.

GR 516 Statistical Methods I¹ 3 s.h.

or

GR 517 Statistical Methods II¹

2. Required Core Courses 15 s.h.

PS 570 Introduction to Public Administration³ 3 s.h.

PS 666 Public Policy Analysis 3 s.h.

PS 668 Public Sector Financial Administration 3 s.h.

PS 671 Seminar in Public Administration³ 3 s.h.

PS 673 Regional Public Service Administration
in Rural Areas 3 s.h.

or

PS 555 Intergovernmental Relations

3. Directed Research Option 3 - 6 s.h.

a. Students must complete an Internship (PS 698), including a research project for three to six credits at an internship site appropriate for their specialization. The internship will, when appropriate, be supervised by the student's specialization adviser or department designee.

or

b. A Field-Based Research Project, usually as PS 699 Independent Study, may be substituted for the internship requirement upon prior approval by the department and the M.A. in Public Administration program director. This option is generally not appropriate for the International Affairs Concentration.

or

c. Students may opt to write a thesis (PS 850).

The MAPA Directed-Research Manual may be consulted for requirements pertinent to each of these three options.

4. Specialization 15 s.h.

Students must select one of the following with advice from a subfield concentration adviser: Criminal Justice Management; Planning and Regional Development; Human Services Administration; Public Personnel Administration; Municipal Management. (See M.A. in Public Administration program for current list of required courses and additional options for specialization.)

¹If a student can demonstrate proficiency in statistics, the hours required to complete the degree will be reduced from 39 to 36, or from 33 to 30, depending on the selected concentration.

²Students may substitute another research methodology course as approved by the adviser.

³May be waived if taken as an undergraduate, in which case another course may be substituted.

B. International Affairs Concentration 30 s.h. minimum

1. Research Methods 3 - 6 s.h. minimum

PS 674 Analytical Techniques² 3 s.h.

GR 516 Statistical Methods I¹ 3 s.h.

or

GR 517 Statistical Methods II¹

2. Required Core Courses 12 s.h.

PS 670 Foreign Policy Studies 3 s.h.

PS 672 Comparative Political Studies 3 s.h.

and two of the following:

PS 520 International Law 3 s.h.

PS 521 International Organizations 3 s.h.

PS 589 Developing Nations 3 s.h.

3. Directed Research Option 3 - 6 s.h.

a. Students must complete an Internship (PS 698), including a research project for three to six credits at an internship site appropriate for their specialization. The internship will, when appropriate, be supervised by the student's specialization adviser or department designee.

or

b. A Field-Based Research Project, usually as PS 699 Independent Study, may be substituted for the internship requirement upon prior approval by the department and the M.A. in Public Administration program director. This option is generally not appropriate for the International Affairs Concentration.

or

c. Students may opt to write a thesis (PS 850).

The MAPA Directed-Research Manual may be consulted for requirements pertinent to each of these three options.

4. Specialization 12 s.h.

Students must select a specialization, with advice from a specialization adviser, from international, comparative, and public administration courses in this or other departments such as Comparative Administration, Developing Nations, and International Studies. (See director of M.A. in Public Administration program for current list of specializations and required courses.)

5. Foreign Language Reading Competency, established by examination.

¹If a student can demonstrate proficiency in statistics, the hours required to complete the degree will be reduced from 39 to 36, or from 33 to 30, depending on the selected concentration.

²Students may substitute another research methodology course as approved by the adviser.

Sociology

Advanced training in sociology should enable students to think insightfully and critically about society and human relationships and to serve more effectively in a variety of professions. The department's M.A. in Sociology prepares students for employment in human services, government agencies, corporations, higher education, and social research positions. Recent graduates are working as family counselors, alcohol treatment supervisors, domestic violence program staff, medical social workers, mental

health professionals, social policy researchers, and college professors. The M.A. in Sociology is designed to prepare students for such opportunities with two programs of study: the General Sociology Program and the Human Services Program.

In addition to Graduate School admissions requirements, the applicants to the Sociology M.A. program should have completed at least 12 hours of undergraduate social science courses with an average of "B" or better. Students not meeting this requirement may be admitted if they agree to take additional undergraduate or graduate sociology courses designated by the department.

Master of Arts in Sociology

Students select either a six-credit thesis option or a non-thesis option. Students selecting the thesis option must successfully complete a six-credit thesis (see requirements for the thesis listed under the catalog description for SO 850). Counting the six-credit thesis, the thesis option requires a total of 30 credit hours for those in the General Sociology Program and 36 hours (including a six-credit internship) for those in the Human Services Program. The non-thesis option in both programs requires a total of 36 credit hours and successful completion of a comprehensive exam.

Additional courses are available from other departments on related topics such as counseling, individual assessment, women's studies, criminology, cross-cultural studies, public policy and finance, community and urban planning, statistical analysis, and program evaluation. Up to 9 credit hours may be taken outside the department. No more than one-third of a student's total credit hours may be dual-level (500-level) courses. Students who enrolled for dual-level courses while undergraduates at IUP may not repeat the same courses for credit as graduate students.

General Sociology Program

The General Sociology Program is designed especially for those students preparing for research professions, doctoral studies, or teaching in the social sciences.

I. Required Core	9 s.h.
SO 664 Research Seminar in Sociology	3 s.h.
SO 665 Microcomputing Applications in Sociology	3 s.h.
SO 667 Contemporary Sociological Theory	3 s.h.

II. Either

A. (Thesis Option)

SO 850 Thesis	6 s.h.
Approved electives (including at least 9 s.h. in Area of Specialization)	15 s.h.

or

B. (Non-thesis Option)

Approved electives (including at least 9 s.h. in Area of Specialization)	27 s.h.
Comprehensive exam	0 s.h.

III. Areas of Specialization (choose one)¹

- A. Sociology of Deviance
- B. Sociology of the Family/Sociology of the Lifecourse
- C. Medical Sociology

D. Sociology of Organizations

E. Social Stratification

F. Social Change

A specialization enables the student to select a combination of three to five courses (including courses from various other departments) focusing on a particular area of interest. Complementary courses are offered in Women's Studies, Clinical Psychology, Counselor Education, Criminology, Public Administration, Adult and Community Education, Political Science, History, and other departments or programs.

Human Services Program

The Human Services Program is designed to prepare students to work in a variety of human service fields and to offer advanced training for those already employed in human service professions. The Human Services Program is designed for those interested in service delivery to special client groups like the aging, the abused, and the alcohol dependent, or for those interested in human service administration or evaluation.

I. Required Core	15 s.h.
SO 610 Sociology of Human Services	3 s.h.
SO 611 Human Services Administration	3 s.h.
SO 664 Research Seminar in Sociology	3 s.h.
SO 665 Microcomputing Applications in Sociology	3 s.h.
SO 667 Contemporary Sociological Theory	3 s.h.
II. Internship	6 s.h.
SO 698 Internship	6 s.h.

III. Areas of Specialization (Choose one)¹

A. Administration and Evaluation of Human Services

B. Alcohol and Drug Abuse

C. Health and Medicine

D. Children and Families

E. Aging

A specialization enables the student to select a combination of three to five courses (including courses from various other departments) focusing on a particular area of interest. Complementary courses are offered in Women's Studies, Clinical Psychology, Counselor Education, Criminology, Public Administration, Adult and Community Education, Political Science, History, and other departments or programs.

IV. Either

A. (Thesis Option)

SO 850 Thesis	6 s.h.
Approved electives in a chosen area of specialization	9 s.h.

or

B. (Non-Thesis Option)

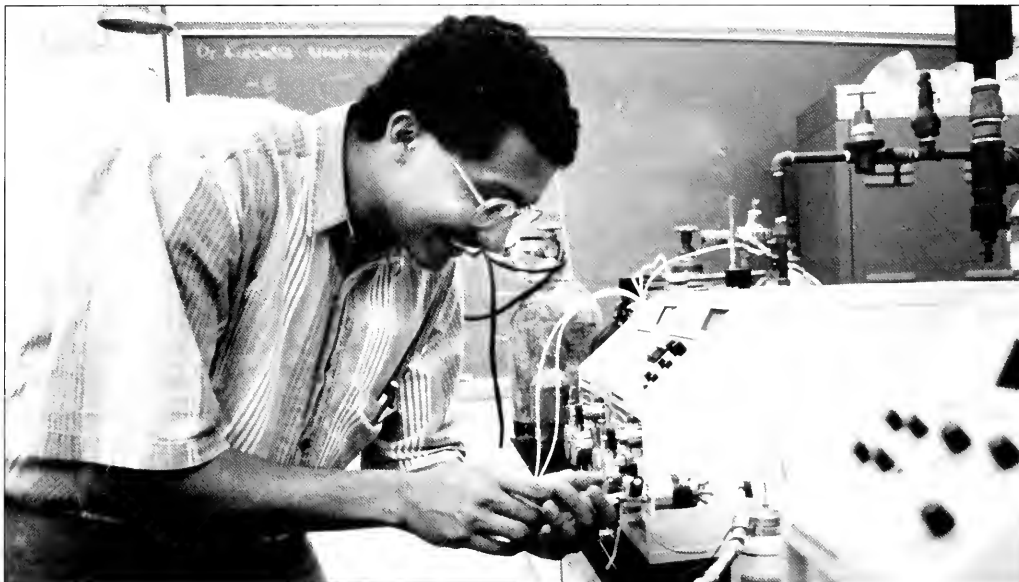
Approved electives including at least 9 s.h. in a chosen area of specialization ²	15 s.h.
Comprehensive exam	0 s.h.

Both thesis and non-thesis options in the Human Services Program require a total of 36 credit hours.

¹Students may also design their own specialization, with the approval of the graduate coordinator

²No more than 9 of these 15 credits may be from outside the department.

College of Natural Sciences and Mathematics



The College of Natural Sciences and Mathematics at IUP offers graduate degrees in Biology (M.S.), Chemistry (M.S. and M.A.), Mathematics (M.S. and M.Ed.), Physics (M.S. and M.A.), and Clinical Psychology (Psy.D.).

Biology

Requirements for admission: To be admitted to the Department of Biology, the applicant must have completed the requirements for a bachelor's degree from an accredited college or university. These requirements should include a major in Biology, one year of inorganic chemistry, one semester of organic chemistry, and one semester of calculus or statistics. Applicants with undergraduate deficiencies may be required to register for appropriate courses.

The requirements for candidacy for the M.S. degree are

- Satisfactory completion of 15 semester hours of graduate work, with at least 8 hours in core courses.
- The selection of a thesis adviser and a committee of at least two additional faculty members (in the case of the thesis student) or a research adviser (in the case of non-thesis student) to guide the candidate in completing the program.
- An official application to candidacy, including a research proposal which has been approved by the adviser, must be submitted to the Biology Department Graduate Committee.

Candidates are expected to maintain an average not lower than 3.0. Continuance in the graduate program for those receiving two individual course grades below a "B" is

contingent upon favorable review of the Graduate Committee.

Master of Science in Biology

Students working for this degree will complete 35 semester hours of work in accordance with the following divisions. Students may pursue either a thesis or a non-thesis option.

I. Core Courses

Thesis option - 20 semester hours

Non-thesis option - 17 semester hours

A. Required Courses

Thesis option

BI 602	Biometry	11 s.h.
BI 611	Biology Seminar I	3 s.h.
BI 612	Biology Seminar II	1 s.h.
BI 850	Thesis	1 s.h.

Non-thesis option

BI 602	Biometry	8 s.h.
BI 611	Biology Seminar I	3 s.h.
BI 612	Biology Seminar II	1 s.h.
BI 699	Independent Study	1 s.h.

B. Core Elective Requirement

For both options, the 9 remaining hours of course credit are to be selected from biology electives and must include one cell/molecular course, one organismal course, and one ecology course.

II. Elective Courses

Thesis option: 15 semester hours

Non-thesis option: 18 semester hours

Courses to be selected with the approval of the adviser from the 500- and 600-level biology, elective courses or from related science and mathematics courses.

III. Competency Exam

Every student must take a competency exam administered by the candidate's advisory committee. The purpose of this examination is to assure that all graduates have a broad-based knowledge of biology, as well as a mastery of their subject matter pertaining directly or indirectly to their research project.

This examination must be scheduled after completion of 18 semester hours but before completion of 27 semester hours. If a student fails this exam, a second exam will be administered which, at the discretion of the committee, can be oral or written. This exam must be taken within a four-month period following the first exam. Failure of the second exam will result in dismissal from the program.

IV. Research Requirement for the M.S.

A. Non-thesis option—The candidate must conduct an original research project under the direction of a faculty adviser. A report in the format of a journal article must be submitted at the conclusion of the study. This requirement is programmed as BI 699 Independent Study.

B. Thesis option—The candidate must conduct original research under the direction of the thesis advisory committee and present a research thesis at the conclusion of the program. The candidate registers for BI 850 Thesis, while engaged in research and preparation of the thesis. The candidate will present a public seminar, reporting results of the research, and an oral defense before the thesis committee.

In many courses in the Department of Biology, additional laboratory time may be required beyond the regularly scheduled periods.

Chemistry

The Chemistry Department offers two different degree programs on the master's level: the Master of Science and the Master of Arts degrees.

The Master of Science degree is for the chemist who intends to pursue further graduate work leading to a Ph.D. or who intends to work as a professional chemist and desires to become more competent in chemistry. This degree is research oriented, and successful completion of an experimental thesis is required. Also, two consecutive semesters of residency are required.

The Master of Arts degree is designed to meet the needs of the chemist who is currently a full-time employee of a chemical or academic institution and who wishes strengthening in those areas relevant to the professional position. The emphasis here is on course work. The student may also pursue this degree on a full-time basis.

Four core courses, one in each of the areas of inorganic, organic, analytical, and physical chemistry, are required in

the M.S. and M.A. programs.* Beyond this point, the programs separate, with the M.S. student taking more specialized work in chemistry along with an experimental research problem.

The M.A. candidate will take more specialized work in chemistry and will be encouraged to take courses outside the sciences if they are relevant to the particular area of employment.

General admissions requirements: Students should have completed one year each of general chemistry, analytical chemistry, organic chemistry, physical chemistry, general physics, and calculus. Students wishing to specialize in biochemistry should also have had an undergraduate course in biochemistry. A student deficient in the above areas of study may also be admitted provided these deficiencies are made up concurrently with the student's graduate studies.

*An exception to this is afforded the student wishing to specialize in biochemistry.

Master of Arts in Chemistry

1. Industrial/teaching experience: Before the degree of M.A. in chemistry can be granted, the applicant must have had three years of full-time employment in an approved area of chemistry. Only those years of employment after obtaining the bachelor's degree may be counted. This experience meets the university residency requirements.

II. Core Courses		14 s.h.
CH 540	Physical Chemistry	3 s.h.
CH 600	Seminar*	3 s.h.
CH 610	Inorganic Chemistry	3 s.h.
CH 620	Analytical Chemistry	3 s.h.
CH 630	Organic Chemistry	3 s.h.

III. Course Electives (10 to 16 s.h.)

Any graduate-level courses selected from the natural sciences and mathematics with the permission of the candidate's adviser. Special permission from the Chemistry Department's Graduate Committee will be required for courses outside the sciences.

IV. Thesis Requirements (0, 2, or 4 semester hours)

The student has three options:

A. Thesis not required—A total of 30 semester hours in suitable courses are acceptable.

B. No-Committee thesis (CH 850-2 s.h.)—Refer to the steps in satisfying the research requirement for submitting a "Two-Hour, No-Committee Thesis."

C. Committee thesis (CH 850-4 s.h.)—If the candidate is doing research as part of full-time employment, that research may be submitted as a thesis, provided approval is given in advance by the employer and the Chemistry Department's Graduate Committee. The candidate's employment supervisor may serve as an ex-officio member of the thesis committee.

* The M.A. candidate is not required to attend all daytime seminars but is required to present two seminars and is expected to attend the evening seminars.

Master of Science in Chemistry

I. Residence Requirements: The student shall be in residence a minimum of two consecutive semesters of full-time work. Students working as graduate assistants and/or making up deficiencies can expect to be in residence for at least two years.

either

II. For those specializing in analytical, inorganic, organic, or physical chemistry:

A. Required Courses	15 s.h.
CH 540 Physical Chemistry	3 s.h.
CH 610 Inorganic Chemistry	3 s.h.
CH 620 Analytical Chemistry	3 s.h.
CH 630 Organic Chemistry	3 s.h.

An additional 3 s.h. 600-level chemistry course selected from analytical, inorganic, organic, or physical chemistry

B. Electives

The student may, with the advice and approval of the adviser, select the electives from chemistry, physics, biology, or mathematics. CH 500 Special Studies, can provide a maximum of 3 semester hours toward the 30 semester hours necessary for the degree.

or

III. For those specializing in biochemistry:

A. Required Courses	12 s.h.
CH 646 Biochemistry	3 s.h.
CH 623 Physical and Chemical Methods of Separation	3 s.h.
CH 630 Organic Chemistry	3 s.h.
BI 662 Molecular Genetics of Eukaryotes	3 s.h.

B. Electives

at least one of the following:

BI 553 Physiology of Plants	3 s.h.
BI 652 Microbial Physiology	3 s.h.
BI 653 Animal Physiology	3 s.h.
BI 654 Endocrinology	3 s.h.
BI 663 Immunology	3 s.h.

and any graduate courses in the natural sciences and mathematics mutually agreed upon by the student and adviser.

IV. Research and Thesis Requirements:

A. The research work must lead to an acceptable thesis, approved by the student's adviser and the supervisory committee and defended in a final oral examination.

B. Seminar—2 s.h. required in CH 600 Seminar

C. CH 690 Research for at least 3 hours

D. CH 850 Thesis 4 s.h.

To be taken during the term in which student is writing the M.S. thesis.

Mathematics

The Mathematics Department offers three graduate degrees: the Master of Science degree in Applied Mathematics, the Master of Education in Mathematics, and the Master of Education in Elementary and Middle School Mathematics Education.

Master of Science in Applied Mathematics

The M.S. program in Applied Mathematics is designed for students who plan to pursue careers in business, industry, and government. It emphasizes applied mathematics in the areas of operations research and statistics so that its graduates are highly marketable. Requirements are flexible enough to allow appropriate choices for persons preparing for employment or already employed in areas of applied mathematics, for students who will pursue further graduate work in mathematics, and even for those who are engaged in mathematics education at the secondary or postsecondary levels. Students have the option of writing a thesis or participating in an internship.

Program Requirements

I. Core Courses*	15 s.h.
MA 525 Applied Mathematical Analysis I	3 s.h.
MA 545 Programming Models in Operations Research	3 s.h.
MA 546 Probabilistic Models in Operations Research	3 s.h.
MA 563 Mathematical Statistics I	3 s.h.
MA 564 Mathematical Statistics II	3 s.h.

*Required unless comparable courses have been completed at the undergraduate level

II. Controlled Electives**	15 s.h.
MA 547 Simulation Models	3 s.h.
MA 551 Numerical Methods for Supercomputers	3 s.h.
MA 571 Linear Algebra	3 s.h.
MA 641 Differential Equations	3 s.h.
MA 643 Graphs, Networks, and Combinatorics	3 s.h.
MA 645 Nonlinear Programming Models	3 s.h.
MA 661 Advanced Sampling Theory	3 s.h.
MA 663 Nonparametric Statistics	3 s.h.
MA 665 Applied Regression Analysis	3 s.h.
MA 684 Topics in Operations Research	3 s.h.
MA 685 Topics in Statistical Methods	3 s.h.
MA 688 Problems in Applied Mathematics	3 s.h.

**At least 12 s.h. must be at the 600 level.

III. Additional Electives***

Other graduate-level mathematics courses may be selected with the approval of the student's adviser. Also, with the adviser's approval, up to 6 s.h. of graduate work may be taken in disciplines such as Chemistry, Computer Science, Economics, Finance/MIA, and Physics.

***The MS in Applied Mathematics requires a minimum of 27 s.h. of course work in addition to the research requirement listed below.

IV. Research Requirements	3-6 s.h.
Option I	
MA 850 Thesis	3 s.h.

or

Option II	
MA 698 Internship	6 s.h.
Total	30-33 s.h.

Master of Education in Mathematics

The Master of Education in Mathematics is ideal for secondary mathematics teachers. Its purpose is to provide an opportunity for students to increase their knowledge of mathematics and to become aware of research and innovations in mathematics education. Course requirements and electives come from several departments: Foundations of Education (FE), Educational Psychology (EP), Counselor Education (CE), Special Education (EX), and Mathematics (MA, EM).

Program Requirements

A minimum of 30 semester hours must be completed by each candidate for the Master of Education degree, according to the following:

I. Foundations of Education Electives	3 s.h.
FE 514 Comparative Foundations of Education	3 s.h.
FE 611 Historical Foundations of Education	3 s.h.
FE 612 Philosophical Foundations of Education	3 s.h.
FE 613 Social Foundations of Education	3 s.h.

II. Educational Psychology Electives	3 s.h.
EP 604 Advanced Educational Psychology	3 s.h.
EP 573 Psychology of Adolescent Education	3 s.h.
EP 576 Behavior Problems	3 s.h.
EP 578 Learning	3 s.h.
CE 629 Group Procedures	3 s.h.
CE 639 Group Procedures	3 s.h.
EX 650 Exceptional Children and Youth	3 s.h.

III. Research Requirement	3 s.h.
GR 615 Elements of Research	3 s.h.

IV. Mathematics Education Electives	6 s.h.
MA 650 History of Mathematics	3 s.h.
MA 651 Seminar in Teaching Junior High School Mathematics	3 s.h.
MA 652 Seminar in Teaching Senior High School Mathematics	3 s.h.
MA 654 Curriculum and Supervision in Mathematics	3 s.h.
EM 651 The Laboratory Approach to Teaching Mathematics*	3 s.h.
EM 652 Diagnosis and Remedial Teaching of Mathematics*	3 s.h.
EM 653 Mathematics for the Gifted Student*	3 s.h.

V. Mathematics Content Electives	15 s.h.
a. Required unless comparable courses have been completed at the undergraduate level	0-6 s.h.
MA 521 Advanced Calculus I	3 s.h.
MA 576 Abstract Algebra I	3 s.h.
b. Any graduate-level mathematics content courses other than those listed in part a.	9-15 s.h.

*With special permission from the adviser, these courses are acceptable for fulfillment of the Mathematics Education requirement.

Master of Education in Elementary and Middle School Mathematics Education

An integral part of the program will be to familiarize students with recent developments in curriculum, instruction, and implementation of contemporary mathematics programs in elementary and middle schools. Upon completion of the program, the student will be prepared to serve as a resource teacher, mathematics teacher in a departmentalized situation, coordinator, or in other leadership roles in an elementary or middle school mathematics program. For teachers in public schools, the program meets the credit requirements for Instructional Level II certification. It does not provide 7-12 certification for those who hold a K-6 Level I certificate.

Students have three options for the completion of the program leading to a Master of Education degree in Elementary and Middle School Mathematics Education.

Option 1: Primarily designed for those who wish to pursue a degree after the master's degree. The requirements are 27 hours of course work and a 3-hour committee thesis.

Option 2: Primarily designed for those who will take a leadership role in the school. The requirements are 30 hours of course work and written comprehensive examination.

Option 3: Primarily designed for the classroom teacher who wishes to update skills. The requirements are 36 hours of course work with no thesis or comprehensive examination required.

Students must satisfy the following course requirements:

I. Professional Development	9 s.h.
Required:	6 s.h.
EM 650 Curriculum and Instruction in Elementary School Mathematics	3 s.h.
EP 604 Advanced Educational Psychology	3 s.h.
Elective:	3 s.h.

Chosen from the graduate course offerings of the Department of Professional Studies in Education and the Department of Special Education and Clinical Services. Students should consult their adviser concerning prerequisites and appropriateness before scheduling these courses.

II. Educational Research	3 s.h.
GR 615 Elements of Research	3 s.h.

III. Curriculum and Instruction in Mathematics Education Electives	6 s.h.
EM 651 The Laboratory Approach to Teaching Mathematics	3 s.h.
EM 652 Diagnosis and Remedial Teaching of Mathematics	3 s.h.
EM 653 Mathematics for the Gifted Student	3 s.h.
EM 654 Teaching Problem Solving in the Elementary and Middle School	3 s.h.
EM 655 Mathematics for Early Childhood	3 s.h.
EM 698 Supervised Internship	3 s.h.
EM 699 Elementary Math- Independent Study	3 s.h.
EM 850 Thesis*	3 s.h.

IV. Subject Matter Concentration Electives

Options 1 and 2 9 s.h.

or

Option 3 15 s.h.

EM 517 Introduction to Probability and Statistics 3 s.h.

EM 520 Pre-Calculus Mathematics I 3 s.h.

EM 556 Principles of Geometry I 3 s.h.

EM 557 Introduction to Number Theory 3 s.h.

EM 558 Introduction to Logic and Logical Games 3 s.h.

 EM 559 Computer-Related Topics in the
Elementary and Middle School 3 s.h.

EM 571 Basic Concepts of Algebra 3 s.h.

EM 601 Basic Concepts in Mathematics I 3 s.h.

EM 602 Basic Concepts in Mathematics II 3 s.h.

EM 603 Teaching the Metric System 3 s.h.

EM 681 Special Topics 3 s.h.

V. Electives 3 s.h.

 Chosen from other courses in categories I, III, and IV
above.

VI. Comprehensive Exam

Option 2 only

*EM 850 is required for Option 1 only.

Physics

The Department of Physics offers two graduate degrees at the master's level: the Master of Science and the Master of Arts. The Master of Science degree program is designed for students who plan to pursue further graduate work or to undertake research in an industrial position. The degree is research oriented, and a thesis is required. The Master of Arts program will generally be selected by students who wish to strengthen their physics background in preparation for more advanced graduate study or to fulfill teaching certification requirements. This program emphasizes course work, and a thesis is optional.

Because of the wide range of possible courses, students are required to have the consent of their graduate advisers before selecting a course. An adviser is assigned to students as soon as they are accepted into the degree program.

Master of Arts in Physics

This program is the more flexible of the two graduate degree programs offered by the Department of Physics. Each student's program is designed to meet his or her individual needs by the student and adviser working together.

The educational goals of students in many categories can be met while they are working to attain their degree. Several examples of the category of student who may select this degree program are

1. The student whose undergraduate training is in Physics Education or Physical Science Education or Science Education with a strong professional education component. This student may need more content than professional education. In this program, the student may, with the concurrence of his or her adviser, enroll in exactly

that ratio of content courses to professional education courses which is necessary to attain his or her goals.

2. The student who holds a teaching certificate in a field other than physics but is a secondary school physics teacher. These students often require formal course work in a number of areas of physics in order to have physics added to their certificates. This is normally a requirement of their school district and/or the commonwealth. This program allows students to meet this requirement while working toward a degree.

3. The student who wishes to enroll in a cooperative program, including those programs with internship components. Students may earn 8 to 15 semester hours during a semester while interning under one of the special programs instituted by the university.

I. Subject Matter 15 semester hours minimum
Required course work in Physics is to be selected from the graduate physics courses with course numbers of 510 or greater. This selection must have the *prior* approval of the student's academic adviser, and a notation of such approval is to appear in the student's folder.

II. Electives 11 to 18 semester hours
The student may complete the requirements for an M.A. by selecting, with the approval of his or her adviser, from among the offerings of the Graduate School. The number of credits selected for electives depends upon the option exercised under Research and Thesis.

III. Research and Thesis Option

Each Master of Arts student must complete degree requirements in one of the following two ways:

A. Undertake an individual research problem and complete an acceptable thesis. For this option, the student must schedule PY 600 for 2 semester hours and PY 850 for at least 2 semester hours. If the student selects this option, he or she will have completed a minimum of 30 semester hours, including these two courses, for the degree.

B. Decide, with the approval of his or her academic adviser, that a research problem not be undertaken. If this option is exercised, the student will not do a thesis but must complete a minimum of 33 semester hours of course work.

Master of Science in Physics

I. Admission Requirements

Applicants must have a B.S. or B.A. degree with a major in Physics and meet the requirements of the Graduate School and the Department of Physics. Applicants having other degrees that provide sufficient preparation in physics and mathematics will also be considered for admission.

II. Subject Matter Concentration

Required Courses (or their equivalent as approved by the Graduate Committee) 15 s.h.

PY 601	Theoretical Physics I	3 s.h.
PY 634	Statistical Mechanics	3 s.h.
PY 641	Advanced Mechanics I	3 s.h.
PY 651	Advanced Electromagnetic Theory I	3 s.h.
PY 661	Quantum Mechanics II	3 s.h.

III. Research Requirement

Each Master of Science student is required to undertake an individual research problem and to complete an acceptable thesis under the supervision of one of the faculty members eligible to teach graduate courses. The student is expected to choose a research adviser by the beginning of the second semester in attendance and to submit a written thesis proposal to his or her Thesis Committee for approval by the end of the second semester. The Thesis Committee will be selected by the student in conjunction with his or her research adviser.

IV. Comprehensive Examination

The student must pass a comprehensive examination.

V. Free Electives

The student may complete the 30-hour requirement by choosing from among the offerings of the Graduate School, with the advice and approval of the student's graduate adviser.

Psychology

The Psychology Department offers a Doctor of Psychology degree in Clinical Psychology (Psy.D.) that places emphasis upon professional applications of psychology based on a solid grounding in the scientific knowledge base of psychology. The program is designed to meet the academic requirements of licensure and provide the background to assume immediately responsibilities in appropriate professional settings.

The department also offers a program of respecialization in clinical psychology for persons holding a doctoral degree in a nonclinical area of psychology. Psychologists wishing to enter the respecialization program must plan to acquire a broad base of knowledge, skills, and attitudes through an individualized plan of study including course work and practica. This program usually requires two years of campus course work and practica followed by a year-long internship.

Doctorate in Clinical Psychology

Admission to the Psy.D.

The following criteria are used in the evaluation of application materials: (a) overall grade point average and grades in psychology courses (3.0 minimum in both areas); (b) scores on the Aptitude and Advanced sections of the GRE (average of 500 on all sections); (c) training in research methodology; (d) prior clinical experience in practicum or employment; (e) the applicant's statement of goals; (f) letters of recommendation; and (g) results of a personal interview.

Breadth of undergraduate training is preferable to narrow specialization. Weaknesses in one area may be offset by strengths in another area, although the Admissions Committee gives preference to applicants with some demonstrated strengths in all areas. Students may be required to make up deficiencies.

The deadline for receipt of all application materials is January 10. The Admissions Committee will then select a

pool of qualified applicants who will be invited to the campus for personal interviews. Announcements of final admissions decisions will be made around April 1.

Philosophy

The Psy.D. program follows a practitioner or applied model of training of clinical psychologists. Emphasis is placed on professional applications of psychology to a wide variety of human problems. Students receive extensive supervision in the development of skills in interpersonal relations, psychological assessment, psychotherapy, community outreach, and program evaluation and a solid grounding in the scientific knowledge base of psychology.

Curriculum

The Psy.D. program is typically completed in four calendar years of full-time study plus an additional year of full-time internship. The curriculum requires a minimum of 102-104 semester hours of acceptable graduate credit. Each student must complete requirements for (a) core course work; (b) special proficiency/elective coursework requirements; (c) practicum, internship, and professional issues; (d) doctoral project; (e) comprehensive academic and professional examinations; and, (f) master's and doctoral candidacy. In addition, a course in History and Systems in Psychology is required for graduation.

A. Core Course Work 57 s.h.

The core courses are required of all students. These courses cover several areas of psychology and provide the scientific basis for professional practice.

1. Methods of Behavior Change:

PC 630	Methods of Intervention I	3 s.h.
PC 631	Methods of Intervention II	3 s.h.
PC 633	Clinical Group Techniques	3 s.h.
PC 634	Family Therapy	3 s.h.

2. Methods of Assessment and Evaluation:

PC 641	Psychological Assessment I	3 s.h.
PC 642	Psychological Assessment II	3 s.h.
PC 743	Psychological Assessment III	3 s.h.

3. Research and Methodology:

PC 601	Research Methods in Psychology I	3 s.h.
PC 603	Evaluation Research	3 s.h.
PC 704	Clinical Research Methods	3 s.h.

4. Individual Differences:

PC 635	Advanced Psychopathology	3 s.h.
PC 636	Personality Theory and Systems of Psychotherapy	3 s.h.
PC 637	Issues in Developmental Psychology	3 s.h.

5. Physiological Bases of Behavior:

PC 646	Drugs and Behavior	3 s.h.
PC 647	Clinical Neuropsychology	3 s.h.

6. Cognitive Bases of Behavior:

PC 632	Models of Learning	3 s.h.
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7. Social Bases of Behavior:

PC 638	Racial, Cultural, and Gender Issues in Psychology	3 s.h.
PC 658	Advanced Social Psychology	3 s.h.

8. History of Psychology:

PC 610	Historical Trends in Psychology	3 s.h.
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B. Elective coursework/Special Proficiency: three courses

Students select three advanced courses in consultation with an adviser. Special elective packages include Child/Family and Behavioral Medicine.

C. Practicum, Internship, and Professional Issues:

	27 s.h.
PC 770 Professional Issues	3 s.h.
PC 798 Advanced Psychological Practicum	21 s.h.
PC 799 Internship	3 s.h.

Students will typically register for practicum experience throughout their program with sampling from diverse settings. During the final year, a full-time professional internship emphasizing depth and long-term involvement is required.

D. Doctoral Project: 9 s.h.
PC 950 Doctoral Project (Dissertation) 9 s.h.

E. Comprehensive Academic and Professional Examinations: 0 s.h.

Each year, an evaluation of clinical and professional competence will be made. This evaluation data will be shared with the student as feedback, and a joint effort will be made to remediate any deficiencies.

Students must also pass a preliminary examination and a research proficiency evaluation covering basic knowledge appropriate for a professional psychologist. This examination will cover material related to all of the core course work areas.

The Clinical Proficiency Evaluation is completed during the final year on campus. Students present assessment and therapy work samples to a committee of faculty members.

Satisfactory performance on both the preliminary examination and the professional evaluations must be achieved before candidacy for the doctorate will be recommended. Serious deficiencies may result in recommendations for remedial work, reexamination, delay of candidacy, or termination from the program.

F. Master's and Doctoral Candidacy

Students will routinely obtain the master's degree en route to the doctorate. Requirements for candidacy for the M.A. degree include the successful completion of twenty-four credits of approved graduate course work with a grade point average of 3.0 and the recommendation of the Clinical Training Committee based on satisfactory academic and professional evaluations. The fifty-four credits for the M.A. must include 9 hours of practicum and 45 hours of the core course work of the Psy.D. degree.

The candidacy for the Psy.D. will be awarded following the completion of all M.A. requirements plus a minimum of an additional nine credits, successful performance on the preliminary examination and research proficiency evaluation, and satisfactory annual academic and professional evaluations. A grade point average of 3.0 is required for candidacy.


G. Transfer of Graduate Credit

Applicants who have completed course work at other institutions may request transfer of credit. A maximum of 36 semester hours of credit may be approved. A portion, but not all, of the practicum requirements may be transferred for equivalent supervised experience.

H. Part-time Study and Residency

Students must complete two consecutive semesters or one summer plus the preceding or following semester of full-time study to meet residency requirements. At other times, students may complete part-time studies. All students complete a Plan of Study, which will include a detailed semester-by-semester outline of proposed course work and completion dates for exams, doctoral project, and internship. An average of 15 semester hours must be completed each year, and all requirements must be completed within seven years.

Other Policies

The Psychology Department has established guidelines for the registration and completion of the doctoral project, academic good standing, full-time student status, an appeals process, and other academic matters. These guidelines are explained in the Psychology Graduate Student Handbook.

The Graduate School and Research



Professional Growth

The Professional Growth program leading to an M.A., M.S., or M.Ed. is a highly restricted and specially structured course of studies determined by the student and his/her advisory committee. The program may not duplicate an existing graduate degree program at IUP. For each degree area, the total credit-hour requirement is the same: 30 credit hours. Students electing to pursue an M.Ed. degree in Professional Growth should receive additional advice from the College of Education. The requirements for all M.Ed. degrees have a certain core that must be fulfilled. A 4-semester-hour committee thesis is required, as well as GR 615 Elements of Research. An administrative member from the Graduate School is a mandatory thesis committee member in addition to at least two members of the faculty from related academic disciplines. For further information, write to the Adviser, Professional Growth Degree Program, The Graduate School and Research, IUP, Indiana, PA 15705.

Course Descriptions

AC: Adult and Community Education **Department of Counseling, Adult Education, and Student Affairs** **College of Education**

AC 620 Introduction to Adult and Community Education 3 s.h.

A survey course which examines the fields of adult and community education philosophically and historically and in terms of current programs and processes. The course includes the study of adult and community education principles and concepts as well as available literature and resources.

AC 621 The Adult Learner 3 s.h.

This course focuses on the adult as a learner: physiological, psychological, sociological, and intellectual characteristics and how they affect learning.

AC 622 Program and Process Development in Adult and Community Education 3 s.h.

A knowledge and skill-building course designed for present and future adult and community education practitioners. This how-to course examines concepts and practices relevant to program development in traditional and nontraditional educational settings.

AC 623 Organization and Administration in Adult and Community Education 3 s.h.

This course introduces the student to basic theories of educational administration and management and organizational structure. It includes a study of and application of the tasks, tools, strategies, and leadership role of the adult and community education administrator. **Prerequisite:** permission.

AC 625 Teaching and Learning in Adult and Community Education 3 s.h.

This course examines teaching-learning theories as they relate to adults, the teaching-learning process in a variety of educational learning settings, instructional methods, techniques and devices which are effective with adults, and instructional designs and evaluative methods effective in the teaching-learning process. **Prerequisite:** permission.

AC 735 Seminar in Adult and Community Education 3 s.h.

This course has a research emphasis. It involves an intensive study of special topics in adult and community education. Research content varies according to student interest. **Prerequisite:** permission.

AC 740 Internship in Adult and Community Education 6 s.h.

This is an individually designed field project in which students work with a site project adviser and a university adviser. The six-credit internship is a single project designed in two phases, each earning three credits. **Prerequisite:** permission.

AC 745 Practical Research in Adult and Community Education 3 s.h.

Practical research in adult and community education is designed to have students conduct and report a formal research study in their field of interest. Students formulate a research problem and design a plan of inquiry that will provide an answer(s) to their stated research problem. Students must be able to interpret their research

findings and communicate them both orally and in writing at a professional level. **Prerequisite:** permission.

AC 850 Thesis 3 s.h.

AD: Administrative Services **Department of Office Systems and Business Education** **Eberly College of Business**

AD 515 Records Administration 3 s.h.

Development of the principles of records administration, including creation, use, maintenance, and destruction. Storage facilities, records classification, forms analysis, control of records, as well as micro-image systems, will be discussed.

AD 581 Special Topics 3 s.h.

AD 699 Independent Study in Administrative Services 1-3 s.h.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. **Prerequisite:** consent of instructor, departmental chairperson, and College of Business dean.

AG: Accounting **Department of Accounting** **Eberly College of Business**

AG 501 Advanced Accounting 3 s.h.

Study of business combinations and consolidations as well as accounting problems of specialized nature such as goods on consignment, installment sales, receivership accounts, agency and branch accounting. **Prerequisite:** AG 302 or equivalent (9 s.h. of Accounting).

AG 502 Foundations of Financial Accounting 3 s.h.

A basic course for graduate students encompassing the concepts of accounting fundamentals, external reporting and the interpretation of accounting principles, and external reporting and the interpretation of accounting information for financial decision making in domestic and international corporations.

AG 512 Advanced Cost Accounting 3 s.h.

Theory, preparation and use of budgets, analysis of cost variances, direct costing, and extensive analysis of various cost control and profit planning programs. **Prerequisite:** AG 311.

AG 531 Auditing 3 s.h.

A study of auditing theory and practical application of auditing standards and procedures to the verification of accounts and financial statements, working papers, and audit reports. **Prerequisite:** AG 302.

AG 581 Special Topics in Accounting 3 s.h.

Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending on specific topics. May be repeated by specific approval. **Prerequisite:** permission of the instructor and College of Business graduate coordinator.

AG 607 Management Accounting 3 s.h.
Designed for management personnel who are not accountants but who need to understand the accounting process and the use of accounting information by management in making decisions and in performance evaluation. **Prerequisite:** AG 202. Not open for credit for students with constructive credit for AG 311.

AG 613 Financial Statement Analysis 3 s.h.
Detailed analysis and interpretation of financial statements using the various purposes and coverage of the accounting principles underlying the data to be analyzed. **Prerequisite:** AG 202.

AG 681 Special Topics in Accounting 3 s.h.
Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. **Prerequisite:** permission of the instructor and the College of Business graduate coordinator.

AG 699 Independent Study in Accounting 1-3 s.h.
Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. **Prerequisite:** consent of instructor, departmental chairperson, and dean, College of Business.

AG 850 Thesis 1-6 s.h.
For students writing the thesis. AG 850 should be scheduled for the semester in which they plan to complete their work. The thesis may be a noncommittee thesis (1-3 s.h.), with one faculty member serving as the student's adviser, or a committee thesis (4-6 s.h.), for which the student's adviser, two additional faculty members, the College of Business graduate coordinator, and/or the representative of the dean, College of Business, may constitute the committee.

AH: Art History **Department of Art** **College of Fine Arts**

AH 508 Italian Renaissance Art 3 s.h.
Art History majors, by special arrangement. Covers span of Italian art from 1400s through 1850 and Mannerist movement. Special attention paid to great masters of the period.

AH 509 Baroque and Rococo Art 3 s.h.
General survey of art from 1575 to 1775. Will include architecture, sculpture, painting, and other arts.

AH 625 Architectural Influences in a Contemporary Society 3 s.h.
Experimental problems in structure and aesthetics as related to architecture. Attempts are made to search out the historical roots of many contemporary styles of architecture.

AH 626 Pre-Columbian Art 3 s.h.
Art of Meso-American cultures, Mayas, Aztecs, and Incas, as influenced by Oceanic migrations.

AM: Applied Music **Department of Music** **College of Fine Arts**

Applied Music (AM 601-771) 1-4 s.h.
The following courses will be taught in the form of private lessons geared to the individual student and aiming at maximum progress of each student, depending on the background of the student and time available. The student should, for any series of lessons, use the first number in programming for the first time, the second number for the second time, etc.

AM 601, 651, 701, 751	Private Piano
AM 602, 652, 702, 752	Private Organ
AM 603, 653, 703, 753	Private Harpsichord
AM 605, 655, 705, 755	Private Voice
AM 606, 656, 706, 756	Private Violin
AM 607, 657, 707, 757	Private Viola
AM 608, 658, 708, 758	Private Cello
AM 609, 659, 709, 759	Private String Bass
AM 610, 660, 710, 760	Private Flute
AM 612, 662, 712, 762	Private Oboe
AM 613, 663, 713, 763	Private Bassoon
AM 614, 664, 714, 764	Private Saxophone
AM 615, 665, 715, 765	Private Trumpet
AM 616, 666, 716, 766	Private French Horn
AM 617, 667, 717, 767	Private Trombone
AM 618, 668, 718, 768	Private Baritone Horn
AM 619, 669, 719, 769	Private Tuba
AM 620, 670, 720, 770	Private Percussion
AM 621, 671, 721, 771	Private Guitar

AN: Anthropology **Department of Anthropology** **College of Humanities and Social Sciences**

AN 514 Native Americans 3 s.h.
Survey of culture history and culture area characteristics of the Indians of North America. Detailed study of representative groups related to historical, functional, and ecological concepts.

AN 520 Archaeological Field School 6 s.h.
Introduction to archaeological survey, field excavation, and laboratory processing. Field school students participate in one or more of the on-going research projects of the IUP Archaeology Program.

AN 581 Special Topics 3 s.h.

AR: Art Department of Art College of Fine Arts

AR 581 Special Topics 3 s.h.

AR 615 Art Seminar 3 s.h.

Opportunities for students to conduct in-depth explorations of contemporary trends/issues in Studio Art and to develop proficiency in the area of art criticism. Course content and methods will include writing, verbalization, group discussion, attendance at regional exhibitions, and development of thesis/exhibition proposals. For M.A. candidates only.

AR 640 Graduate Studio in Ceramics 3-18 s.h.

All aspects of handforming, decorating, glazing, and firing will be dealt with. This may include body and glaze formulation and reduction, oxidation, salt, wood, and raku firing, as well as thrown, coiled, or slab construction or combinations thereof. Includes historic and contemporary ceramics and philosophies of the craft. **Prerequisite:** at least one year of undergraduate ceramics.

AR 644 Graduate Studio in Fibers 3-18 s.h.

Fundamentals of fiber construction and processes. Emphasis on experimental approaches to fiber design and construction. Designed to meet the needs of beginning as well as advanced students.

AR 647 Graduate Studio in Jewelry and Metal Work 3-18 s.h.

Advanced study dealing with specialized problems in design and execution of metal work and jewelry. A thesis may be developed depending on research in one of the areas relating to this field: history, materials, tools, processes, or teaching techniques of the craft.

AR 650 Graduate Studio in Sculpture 3-18 s.h.

An advanced course in which students are expected to work on challenging problems in sculpture. A student may explore one or several sculpture or modeling media.

AR 653 Graduate Studio in Woodworking 3-18 s.h.

Specialized study and experiences in the design and execution of problems relating to wood as a crafts material. Opportunity is presented to explore more intensively materials and processes of this craft employing both hand and power tools.

AR 661 Graduate Studio in Drawing 3-18 s.h.

Drawing as a language and continued development of skill in communication and expression in all kinds of materials and media. Drawing as an intimate work of the artist will be expressed.

AR 662 Graduate Studio in Oil Painting 3-18 s.h.

Traditional and contemporary methods and techniques in the area of plastic painting media. Composition in relation to modern painters' problems. Opportunity is presented for exploration and specialization in depth as well as breadth.

AR 668 Graduate Studio in Printmaking 3-18 s.h.

Modes, media, material, techniques, and processes of graphic arts and their use in expression. The student may concentrate on intensive exploration of one media in depth or explore a number of media for breadth of experience. **Prerequisite:** AR 217 or its equivalent.

Studio courses may be taken for a total of 18 semester hours in one studio. No more than 6 semester hours in one studio may be taken during one semester.

AR 681 Special Topics 3 s.h.

AR 698 Internship 3 s.h.

AR 699 Independent Study 3 s.h.

AR 850 Thesis 3 s.h.

BE: Business Education Department of Office Systems and Business Education Eberly College of Business

BE 642 Training and Development in Business Education and Office Systems 3 s.h.

Office systems occupations are analyzed and teaching strategies are developed for training in high-technology settings. Development of unit plans, lesson plans, and classroom management strategies will be included on topics such as computer literacy, desktop publishing, and telecommunications.

BE 650 Principles and Problems of Business Education 3 s.h.

Surveys basic principles and practices of business education. Among the topics considered are history of the high school business program, purposes, attitudes of management and labor toward education, relationship of general education to business education, trends in the field.

BE 656 Applied Research in Business Education 3 s.h.

An examination of methods and techniques of research in office systems and business education. Students will select a research topic and conduct an actual study on an individualized basis or as part of a small group. A formal research report will be an end product of the course. **Prerequisite:** GR 615.

BE 670 Administrative Communications 3 s.h.

An examination of the concepts and techniques for developing and improving administrative communications through high technology. Emphasis will be on the current needs and changing technology in software, hardware, and telecommunications.

BE 676 Special Studies in Business and Distributive Education 1-6 s.h.

Special topics in business and distributive education. Topics will be announced well in advance of registration.

BE 680 Technical Update 1-3 s.h.

Designed to provide students with up-to-date experiences in areas of rapidly changing technology. Offerings will focus on topics of particular interest to business teachers in high-technology settings.

BE 699 Independent Study in Business Education 1-3 s.h.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. **Prerequisite:** consent of instructor, departmental chairperson, and College of Business dean.

BI: Biology

Department of Biology

College of Natural Sciences and Mathematics

BI 520 Biology of Higher Invertebrates 3 s.h.

A phylogenetic overview of the higher invertebrates, Annelida through lower Chordata. A systematic approach on functional morphology and microstructure, behavior and physiology, under an evolutionary umbrella. Laboratory sessions offer additional research opportunities. **Prerequisite:** BI 120.

BI 525 Herpetology 3 s.h.

A comprehensive survey of the classes of Amphibia and Reptilia, including their classification, structure, origin, evolution, phylogenetic relationships, distribution, and natural history. Special emphasis is placed on the herpetofauna of Pennsylvania.

BI 532 Comparative Vertebrate Anatomy 3 s.h.

Discussion of anatomy of representative vertebrates from a comparative point of view. Stresses major organizational changes observed in vertebrate history. Two-hour lecture, three-hour lab per week. **Prerequisite:** BI 120.

BI 550 Pymatuning: Field Studies 3 s.h.

During the summer session, various field courses are offered through the Pymatuning Laboratory of Ecology. The offerings will vary depending on the summer. Some of the possible offerings include Experimental Design, Fish Ecology, Behavioral Ecology, Aquatic Botany, and Ecological Genetics. Information regarding specific offerings available from Biology Department in spring.

BI 553 Physiology of Plants 3 s.h.

A comprehensive study of physiological bases for organization and function of living plants. Current literature is emphasized.

Prerequisite: Biochemistry. Closed to students with undergraduate BI 351 Plant Physiology.

BI 563 Limnology 3 s.h.

An investigation into the physical, chemical, and biological aspects of inland waters and their interrelationships. Saturday or Sunday labs may be required. **Prerequisite:** Ecology.

BI 566 Principles of Virology 3 s.h.

Topics include structure, classification, assay, and transmission of animal, bacterial, and plant viruses; methods used in the study of viruses; viral replication, gene expression, and gene regulation; host-viral interactions and sub-viral pathogens.

BI 575 Mammalogy 3 s.h.

General discussion of mammals, emphasizing systematics, distribution, and structure-function modifications related to their evolution. A paper is required.

BI 576 Parasitology 3 s.h.

The parasitic protozoa, flatworms and roundworms. Major emphasis is on species infesting man and includes their structure, physiology, ecology, life cycles, and pathogenicity. Arthropods involved in parasite transmission included. **Prerequisites:** one year Biology, Vertebrate and Invertebrate Zoology.

BI 602 Biometry 3 s.h.

The choice and application of standard, efficient, and practical statistical techniques for data analyses in common biological research situations.

BI 603 Advanced Techniques in Biology 1-3 s.h.

Introduction to advanced techniques and procedures used in biological research. Topics vary. Students may take up to 3 s.h. for credit toward the degree. **Prerequisite:** Permission.

BI 611 Biology Seminar I 1 s.h.

Develops essential skills for the professional biologist, including public presentation of biological information and the ability to critique biological data and ideas.

BI 612 Biology Seminar II 1 s.h.

Develops essential skills for the professional biologist, including writing of research proposals and presentation of seminars.

Prerequisite: BI 611.

BI 622 Advanced Ornithology 3 s.h.

A detailed study of bird populations, behavior, and movement, including the annual cycle. **Prerequisite:** ability to identify local birds visually and by their songs.

BI 624 Advanced Entomology 3 s.h.

Insect morphology, including external and internal organization of different species of insects. Comparisons between species included. An independent research study and seminar presentation required.

BI 631 Plant Ecology 3 s.h.

Nature and distribution of vegetation in relation to environmental factors. Field investigations of local plant communities constitute bulk of lab work. **Prerequisites:** Field Botany, Plant Taxonomy, or general knowledge of local flora.

BI 640 Animal Ecology 3 s.h.

Effect of environmental factors on animals, animals as members of communities, their trophic relationships, their ecological distribution, population dynamics, and aspects of animal behavior. A field or lab problem is required.

BI 641 Population and Community Ecology 3 s.h.

The ecology of animal and plant populations, including the study of life tables and demography, population growth and regulation, and the evolution of life history traits. Community ecology considers the interactions among populations such as competition, predation, and mutualism, and how such interactions control the composition of a community. **Prerequisite:** Introductory course in ecology or permission of instructor.

BI 650 Plant Systematics 3 s.h.

Introduces students to the history, theory, literature, sources, and interpretation of plant systematic data and to methods of plant collection and identification.

BI 653 Animal Physiology 4 s.h.

Digestion and molecular transport of nutrients, gaseous exchanges, excretion, muscular activity and control, and endocrine and neural elements. **Prerequisite:** Animal Biology.

BI 662 Molecular Genetics of Eukaryotes 3 s.h.

Study of organization and chemical structure of genes in relation to molecular function and evolution. Emphasis will be placed on the genetic systems of eukaryotes and their viruses. **Prerequisites:** Genetics, Organic Chemistry, and Biochemistry or permission of the instructor.

BI 681 Special Topics 1-3 s.h.

Advanced topics in biology. **Prerequisite:** permission of instructor.

BI 699 Independent Studies 1-3 s.h.
Individual or small group instruction, by tutorial and intensive literature survey, in a particular area not covered by a student's course work or thesis research. By arrangement with instructor and approval of graduate director. Maximum of six hours to be used toward the degree.

BI 850 Thesis 6 s.h.

NOTE: Summer courses offered at the Pymatuning Laboratory of Ecology may be taken for biology elective credit.

BL: Business Law

Department of Finance and Legal Studies

Eberly College of Business

BL 581 Special Topics in Business Law 3 s.h.
Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary, depending upon the interests of instructor and students, with instructor choosing specific topics. May be repeated by specific approval. **Prerequisite:** Permission of the instructor and the College of Business graduate coordinator.

BL 633 Case Problems in Business Law 3 s.h.
Deals with solution of case problems as applied to various topics in the field of business law. **Prerequisite:** AD 235 or equivalent.

CE: Counselor Education

Department of Counseling, Adult Education, and Student Affairs

College of Education

CE 620 Community Counseling 3 s.h.
Provides an introduction to the work of the community counselor in a variety of roles in many different settings.

CE 627 Consultative and Counseling Theory 3 s.h.
Theories, objectives, principles, and practices of consulting and counseling with individuals and groups are covered. Emphasis is placed on techniques and practices related to children.

CE 629 Group Procedures 3 s.h.
Emphasis is placed upon understanding and developing group techniques related to the development and growth of children. Counseling with individuals and groups are covered.

CE 631 Introduction to Guidance Services 3 s.h.
Overview of genesis and development of guidance in American education, including philosophical concepts, psychological theories, cultural and social influences, and current practices.

CE 633 Evaluation Techniques 3 s.h.
Basic statistical and measurement concepts utilized in testing and test interpretations, emphasizing data concerning purposes and types of tests, test administration, scoring, validity and reliability, and principles of test selection for school and community settings.

CE 635 Individual Analysis 3 s.h.
Principles, problems, methods, and content involved in understanding the adolescent and adult and their developing self-concepts. **Prerequisite:** CE 633.

CE 636 Career Development 3 s.h.
Emphasizes how individuals acquire self- and vocational knowledge, skills, and abilities, which lead to effective career decisions. Considers career education, vocational development, decision-making skills, and the processing and use of information.

CE 637 Counseling and Consultative Theory 3 s.h.
Theories, objectives, principles, and practices of counseling and consulting with individuals are covered. Counseling skills and interviewing techniques are presented and practiced to prepare the student for the practicum experience.

CE 638 Management of the Guidance Services 3 s.h.
Helps the school counselor acquire necessary competencies to manage guidance services. Emphasis placed upon planning, organizing, actuating, and controlling functions of management as applied to the guidance services. **Prerequisites:** CE 631, CE 633, CE 636, CE 637, and CE 639 or their equivalents.

CE 639 Group Procedures 3 s.h.
Emphasis will be placed upon the nature of groups, techniques involved in the development of group dynamics, formation and operation of groups, organization and structure of groups, and the influence of the group. **Prerequisite:** CE 637.

CE 646 Interpersonal Sensitivity 3 s.h.
Participants will explore their interpersonal interaction style in groups and individually. Human potential of the students will be developed as they enter into authentic, honest, and trusting relationships within the context of a small-group experience, encouraging an examination and understanding of oneself and one's impact on others.

CE 681 Special Topics 3 s.h.

CE 699 Independent Study 1-3 s.h.
Topic pertinent to the individual's program of study. By permission of department chairperson and adviser only.

CE 730 Professional, Ethical, and Legal Considerations 3 s.h.
Emphasis is placed on professional, legal, and ethical issues associated with the human services. Analyzes the function of ethics in the profession and the study of legal rights, duties, and liabilities of human service practitioners.

CE 740 Supervised Practicum—Child 3 s.h.
Practice in developing and using individual and group techniques for those who work with children. Observing, interviewing, and consulting procedures will be developed. **Prerequisite:** CE 627.

CE 741 Supervised Practicum—Adolescent/Adult 3 s.h.
Practicum experience in counseling and consulting techniques, including interviews, observations, written reports, and group interaction. Techniques for working with adolescents and adults are emphasized. Emphasis is placed on the development of effective interpersonal relationship skills. **Prerequisite:** CE 637.

CE 752 Advanced Practicum (Elementary) 3 s.h.
Provides a child counseling experience in applying appropriate interventions and consultation practices designed to facilitate the personal, social, and academic growth of children. **Prerequisites:** CE 627 and 740.

CE 753 Counseling: Advanced Practice 3 s.h.
Supervised counseling experience under practicum conditions. Emphasis will be placed on implementing relationship-building skills while developing advanced methods of facilitating the counseling process. **Prerequisites:** CE 637 and CE 741.

CE 755 Field Experience 3 s.h.
Provides a supervised field placement for students in the counselor education programs. The plan and scope of the field experience will be determined by the student and supervising faculty on an individual basis. **Prerequisite:** Certification, core courses, and specially required courses.

CE 798 Internship in Counselor Education 12 s.h.
The internship provides an opportunity to apply didactic experiences in an actual work setting. Sites must be approved by the department.

CE 850 Thesis 3 s.h.

CE 950 Dissertation 12 s.h.

CH: Chemistry **Department of Chemistry** **College of Natural Sciences and Mathematics**

CH 500 Special Studies 4-6 s.h.
Intensive survey of literature in a particular area as well as individual instruction on recent advances in chemical instrumentation, methods of research, and specialized subject areas. To be arranged with instructor.

CH 521 Advanced Instrumental Methods of Analysis 3 s.h.
Modern instrumental analysis, including electrical, spectrophotometric, x-rays, gas chromatography, and other methods. (Open to M.S. and M.A. candidates by permission only) Four-hour lecture/laboratory.

CH 531 Organic Qualitative Analysis 3 s.h.
Gives student experience in systematic identification of various classes of organic compounds by both chemical and physical methods. Four-hour lecture/laboratory.

CH 535 Current Topics in Organic Chemistry 3 s.h.
With selections to meet the needs of the students, possible topics may include reaction mechanisms, molecular spectroscopy, stereochemistry, natural products, heterocycles, polymer chemistry, and organic synthesis.

CH 540 Physical Chemistry (core course) 3 s.h.
An introduction to spectroscopy and molecular structure. Lecture—3 hours.

CH 576 Radiochemistry 3 s.h.
Basic aspects of nuclear structure, phenomena of radioactive isotopes, and chemical effect on such isotopes. Concurrent lab work utilizing instruments for detection and measurement of radioactive nuclides used in chemical experimentation. Four-hour lecture/laboratory.

CH 600 Seminar 1 s.h.
A study of modern chemical research and research techniques. Scientific communication, including the role of the science laboratory in research. The student will present one oral report. Lecture—1 hour.

CH 605 Experimental Techniques in Chemistry 3 s.h.
Experimentation, observation, and application of scientific concepts. Classroom and lecture demonstrations will be prepared, presented, and evaluated by students and instructor. **Prerequisites:** Chemistry I, II; Physics I, II. Four-hour lecture/laboratory.

CH 610 Inorganic Chemistry (core course) 3 s.h.
Theoretical inorganic chemistry and, in particular, structure, periodicity, coordination chemistry, bonding, and chemistry of nonaqueous solvents. Lecture—3 hours.

CH 620 Analytical Chemistry (core course) 3 s.h.
Theoretical principles of analytical chemistry. Lecture—3 hours.

CH 622 Spectrochemical Methods of Analysis 3 s.h.
Study of instrumentation and analytical applications of ultraviolet and visible absorption, atomic spectrometry, fluorescence, x-ray spectrometry, and nuclear magnetic resonance. Lecture—2 hours; laboratory—4 hours.

CH 623 Physical and Chemical Methods of Separation 3 s.h.
Application of chromatographic methods to the quantitative separation and analysis of chemical systems. Topics will include gas, column, paper, and ion exchange chromatographic methods and other methods of separation as time permits. Lecture—2 hours; laboratory—4 hours.

CH 630 Organic Chemistry (core course) 3 s.h.
Principles of physical chemistry will be applied to the study of organic reaction mechanisms. Lecture—3 hours.

CH 633 Chemical Literature 3 s.h.
Periodicals, encyclopedias, handbooks, abstracting journals, and other sources dealing with various divisions of chemistry will be studied. Students are required to conduct a literature search on a selected topic. Lecture—3 hours.

CH 645 Current Topics in Physical Chemistry 3 s.h.
With selection to meet the needs and interests of the student, possible topics include quantum mechanics, molecular structure, chemical thermodynamics, statistical mechanics, and chemical kinetics.

CH 646 Biochemistry 3 s.h.
Topics covering and emphasizing most recent developments in the areas of biochemistry, such as amino acids, carbohydrates, lipids, nucleic acids, proteins, enzymes, metabolism, and metabolic control. Lecture—3 hours.

CH 681 Special Topics 3 s.h.

CH 690 Research 1-6 s.h.
Laboratory and literature investigation of student's thesis problem done under the direction of a faculty member. Within the first 15 hours of course work, the student must schedule at least one credit of research for which the student performs the literature review and writes a research proposal.

CH 699 Independent Study 1-6 s.h.
Available to students who seek to deepen their knowledge in some specific aspect of chemistry. The student must discuss the nature of the independent study with a faculty member having expertise in the area prior to registration. Special attention to development of new ideas and new ways of presenting scientific principles.

CH 850 Thesis 2 or 4 s.h.
For students writing the thesis. Should be scheduled for the semester in which the student plans to complete work. May be a noncommittee thesis (2 semester hours), with one faculty member serving as adviser, or a committee thesis (4 semester hours), for which the student's adviser, two additional faculty members, and the dean of the College of Natural Sciences and Mathematics constitute the committee.

CM: Communications Media
Department of Communications Media
College of Education

CM 503 Scriptwriting 3 s.h.

Provides an introduction to scriptwriting for films and filmstrips. Various styles and techniques of writing will be analyzed, and each student will be expected to experiment with the techniques presented. Emphasis on writing and in-class criticism of student script.

CM 504 Foundations of Broadcasting 3 s.h.

An examination of the historical, legal, and economic aspects of modern broadcasting. Extensive readings in fundamental theory and a study of current station and network practices, educational as well as commercial.

CM 505 Radio Production 3 s.h.

Instruction in the various techniques and applications of sound production and programming for radio. Emphasis on planning, scripting, and producing broadcast-quality radio programs, as well as commercial-type announcements and station promotional devices.

CM 540 Communications Graphics 3 s.h.

Provides basic experience in planning and producing commonly used television studio, industrial display, and classroom graphics, which are applicable in educational, industrial, and medical training programs. Experiences include layout and lettering; color; mounting and laminating techniques; copying techniques such as Thermofax, photography, and Xerography; photo silk screening; and photo sketching.

CM 549 Basic Audio Recording 3 s.h.

Theory and practices of recording sound and developing an understanding of language of sound recording and the ability to make sound recordings. Exposure to recording for various media, including radio, music, motion pictures, television, multi-image, and slide and tape production. Students will gain hands-on experience through labs and projects to be completed outside class.

CM 551 Basic TV Production and Direction 3 s.h.

Intensive lab course circuit facilities designed to develop skills in program production and direction. Theory and practice of production are examined with each student expected to produce a television program during the course.

CM 552 Electronic Field Production 3 s.h.

For advanced graduate students with prior training and experience in television. Advanced television production techniques, set design, lighting, special effects, and advanced editing techniques. **Prerequisite:** CM 551.

CM 571 Beginning Photography 3 s.h.

Emphasis on using still picture camera and the darkroom for instructional purposes, the making of black-and-white negatives, 35mm slides, copy work, developing black-and-white film, and black-and-white contact printing and enlarging. Each student must have manual focusing and manual exposure setting capability. No previous photographic experience is necessary.

CM 572 Photography II 3 s.h.

Helps students develop their camera and printmaking skills to the extent that they can employ those processes to communicate an intended message with their photographs. The students explore the characteristics and uses of a variety of films. They learn several skills, such as copy work, basic techniques of portrait lighting, and altering film development to suit high- or low-contrast subjects.

Prerequisites: CM 571 and permission of instructor.

CM 573 Creative Darkroom Techniques 3 s.h.

Introduces the student to a variety of photographic manipulations. Specific assignments are chosen from such techniques as high-contrast imagery, tone line, bas-relief, posterization, texturization, paper negatives, hand coloring, multiple printing, and photomontage. **Prerequisites:** CM 571 and permission of instructor.

CM 577 Slide and Sound Production 3 s.h.

Emphasizes techniques of color and black-and-white slide preparation, duplication, tiling, and binding. Examines techniques necessary to produce color filmstrips on a commercial basis, and students will participate in making of a filmstrip through all stages, from script to screen. Techniques for making homemade filmstrips will also be explored. Each student must furnish a 35mm camera and an acceptable exposure meter. **Prerequisite:** CM 571.

CM 581 Special Topics 3 s.h.

Advanced topics, offered on an experimental basis, within the discipline of communications but not dealt with in other courses. **Prerequisite:** permission of the instructor.

CM 615 Role of Learning Resources 3 s.h.

Examines role of perception as it pertains to sensory experiences and inner cognitive processes in relationship to maturation, goals and drives, and environment. Seeks to relate psychological processes to learning resources, with emphasis on newer media.

CM 630 Classification and Cataloging of Learning Resources 3 s.h.

Principles of classifying and cataloging learning resources such as motion pictures, videotapes, filmstrips, slides, transparencies, disk and tape recordings, microfilm, microcard and microfiche, flat pictures, etc. For learning resources administrators and librarians.

CM 660 Media Management 3 s.h.

Considers the problems in setting up and managing an integrated program, including production, selection, utilization, and management of learning resources centers; problems of finance and organization of the different services; relationships among school systems, colleges, and community adult groups; and evaluation standards for various services.

CM 699 Independent Study 1-3 s.h.

The student may elect, with approval of adviser, to do several different independent study projects. University facilities and equipment are provided, but student must supply materials and pay for processing and production costs. **Prerequisites:** successful completion of the basic course in the medium selected; the professor's approval.

CR: Criminology

Department of Criminology

College of Humanities and Social Sciences

CR 600 Criminological Theory 3 s.h.
An examination of criminological theories with emphasis on origins and applications of relevant theoretical approaches to crime and criminally deviant behavior. Required of all master's students.

CR 601 Proseminar 3 s.h.
Survey of current research, critical issues in the administration of justice, and criminological theory. Designed to acquaint the student with recent developments in the discipline of criminology. Required of all master's students.

CR 605 Research Methods 3 s.h.
Methods and techniques of research in criminology. An in-depth examination of the role of research in the analysis, interpretation, and clarification of problems in criminology and the administration of justice. The development of a research proposal/thesis prospectus will be the end product of the course. Required of all master's students.

CR 610 Legal Issues in Criminology 3 s.h.
An in-depth study of contemporary legal issues faced by criminal justice professionals. Emphasis is placed on criminal constitution problems as well as the judicial review of administrative decisions made by criminal justice organizations. Required of all master's students.

CR 630 Seminar in Administration and Management in Criminal Justice 3 s.h.
The study of bureaucracy and complex organization with emphasis on the concepts and practices of the organization and management of agencies in the administration of justice. Required of all master's students.

CR 631 System Dynamics in the Administration of Justice 3 s.h.
A study of dynamic systems and analytical techniques relevant for understanding new perspectives of the administration of justice. Required of all master's students.

CR 650 Seminar in Advanced Criminological Thought 3 s.h.
An in-depth examination of select criminological thought.

CR 660 Seminar in Advanced Criminal Law 3 s.h.
A study of the theory of law as a means of social control, advanced problems and issues in the use of the criminal sanctions, and alternative legal means of controlling deviant conduct.

CR 665 Criminal Justice Planning and Evaluation 3 s.h.
The study of planning and evaluation in criminology and the administration of justice and of the literature and practices, including problems and issues and tasks confronting planners and evaluators.

CR 670 Seminar in Contemporary Corrections 3 s.h.
An examination of current issues and problems in contemporary corrections.

CR 675 Seminar in Contemporary Law Enforcement 3 s.h.
A social psychological examination of current issues and problems in contemporary law enforcement.

CR 681 Special Topics 3 s.h.
Special topics courses are offered at the discretion of the department in a wide area of subjects directly related to law enforcement, courts, corrections, or security.

CR 685 Seminar in Contemporary Juvenile Justice and Delinquency 3 s.h.
An examination of current issues and problems in contemporary juvenile justice and delinquency.

CR 690 Seminar in the Contemporary Judicial System 3 s.h.
An examination of current issues and problems in the contemporary judicial system.

CR 698 Graduate Readings in Criminology 3 s.h.
With faculty supervision, students will read at least six major criminological texts and participate in a seminar situation for the purpose of discussing the reading materials.

CR 699 Independent Study 3 s.h.
Research of a significant issue or problem in criminology or the administration of justice. Instructor, coordinator, and chairperson approval required. May be taken twice for a maximum of 6 semester hours.

CR 710 Advanced Theoretical Criminology 3 s.h.
An intensive examination and critical analysis of the original works of selected theorists. Major theorists will be chosen each semester, based on the interests of the professor and students.

CR 715 Quantitative Strategies for Analysis in Criminology 3 s.h.
Computer analysis of quantitative data applied to the behavioral science of criminology; the logic of data analysis, fundamentals of statistical procedures commonly used in criminological analysis. Students also will learn to critique published criminological research. **Prerequisite:** GR 516 or permission.

CR 717 Advanced Qualitative Methods 3 s.h.
Explores the criminological research enterprise from the qualitative perspective. Focuses on the relationship among all components of research design, including problem formulation, theory, data collection, analysis, and presentation of findings. Students will individually design a project and carry out preliminary stages of data collection. Permission required.

CR 718 Quantitative Strategies for Analysis in Criminology 3 s.h.
Computer analysis of quantitative data to the behavioral science of criminology; the logic of data analysis, fundamentals of statistical procedures commonly used in criminological analysis. Students also will learn to critique published criminological research.

CR 720 Advanced Quantitative Methods 3 s.h.
An in-depth analysis of the logic and uses of advanced criminological research models. Emphasis will be given to the use of quantitative research techniques and perspectives as they relate to formal theory construction.

CR 722 Measuring Outcomes in Criminology 3 s.h.
In this course students will be challenged to address the important issues associated with appropriately conceptualizing and measuring important outcomes in Criminology/Criminal Justice. Topics to be covered include, but are not limited to, understanding the measurement process, measuring crime through official records, measuring delinquency and criminal victimization, measuring punishments, sentencing, incarceration and recidivism, and comparisons of UCR, NCS, and Self-Report measures.

CR 730 Ethical and Philosophical Issues in Criminology 3 s.h.
An intensive examination of selected ethical and philosophical issues currently facing the field of criminology. Issues for analysis will be drawn from (but not limited to) such categories as the

function of law; integrating theory and practice; ethical issues surrounding research strategies; punishment forms; social control strategies; and crime and justice in the future.

CR 740 Advanced Criminal Justice Policy 3 s.h.

A study of the impact of government crime policies on individuals and groups. An examination of criminal justice policy formulation and analyses of specific policies relevant to crime and the administration of justice.

CR 745 Comparative Justice Systems 3 s.h.

An examination of criminological field research in diverse cultural settings around the world. Special focus given to problem formulation, theory construction, and general research design in comparative justice systems.

CR 748 Criminal Violence: Theory, Research, and Issues 3 s.h.

An overview of general theories of violence and their applications to criminal violence. A variety of research and policy/programmatic issues will be explored, with attention given to issues relating to predicting dangerousness.

CR 749 Victimology: Theory, Research, and Policy Issues 3 s.h.

The course will examine theoretical perspectives and research methods as they impact on the research questions and findings in the field of victimology. Class, race, age, and gender will be applied to analyze issues regarding the role of the victim, kinds of victimization, fear of crime, victimization of offenders and victims by the criminal justice system, and victim's compensation and human rights.

CR 750 Doctoral Colloquium in Criminology 3 s.h.

Provides an academic setting for graduate students to present research and theoretical papers for group discussion. Special topics in criminology will be selected each semester.

CR 781 Special Topics 3 s.h.

CR 801 Advanced Applied Research I 3 s.h.

The application of selected principles of criminological theory and research methods toward understanding and resolving specific problems of justice processing.

CR 802 Advanced Applied Research II 3 s.h.

The application of selected principles of criminological theory and research methods toward understanding and resolving specific problems of justice processing.

CR 803 Advanced Applied Research III 3 s.h.

The application of selected principles of criminological theory and research methods toward understanding and resolving specific problems of justice processing.

CR 804 Advanced Applied Teaching Techniques 3 s.h.

A review of prominent models of effective teaching and the applications of selected models of teaching theory to specific criminological courses.

CR 849 Comprehensive Examination 0 s.h.

Written and/or oral examination to determine competency. Required of all students during the semester in which they are enrolled for their last graduate course.

CR 850 Thesis 6 s.h.

CR 950 Dissertation 12 s.h.

CR951 Extended Dissertation 1 s.h.

CS: Consumer Services

Department of Human Development and Environmental Studies

College of Health and Human Services

CS 533 Consumer Services Study Tour 1-6 s.h.

Offered to broaden the scope of experience and understanding in clothing, textiles, and interior design. Historic costumes, textiles, and decorative arts are viewed. Fashion houses, designer salons, cottage industry centers, retail stores, and museums are visited.

CS 553 Flat Pattern Design 3 s.h.

Garment design achieved by use of flat patterning techniques. An understanding is developed of the interrelationships of garment design, fabric, fit, and construction processes. Two major projects required. One-hour lecture, three-hour laboratory.

CS 554 Tailoring 3 s.h.

Various tailoring methods are studied and applied in the selection, fitting, and construction of a tailored garment. Consumer problems in the selection of ready-to-wear apparel are investigated. A research study or project is required. One-hour lecture, three-hour laboratory.

CS 555 Draping 3 s.h.

In-depth study of the principles involved in fashion design, draping principles, and the manipulation of fabric to conform to the human figure. Student will pad a form to individual measurements and will design garments that are both individual and original. Two major projects required. One-hour lecture, three-hour laboratory.

CS 556 Historic Costume 3 s.h.

Chronological study of historic costume from ancient times to the present day, emphasizing style details as well as social, economic, political, religious, and aesthetic influences on design of clothing. Three lecture hours.

CS 561 Microwave Cooking Technology 3 s.h.

Study of the electronic technology, selection, care, and use of the microwave oven. Basic physical and chemical concepts related to microwave cooking will be included. Individual investigative research problems will be required. Two lecture hours plus two lab hours per week.

CS 562 Historic Interiors 3 s.h.

Chronological study from ancient times to the mid-nineteenth century of the dominant influences and characteristics of historical interiors, furniture, and ornamental design. Emphasis placed upon style detail and its relationship to social, economic, political, religious, and aesthetic influence and to the contemporary scene. Paper required. Three lecture hours.

CS 563 Modern Interiors 3 s.h.

Chronological study from mid-nineteenth century to the present of the dominant influences and characteristics of twentieth-century interiors, furniture, and ornamental design. Emphasis placed upon style detail and its relationship to social, economic, political, religious, and aesthetic influence and to the contemporary scene. Paper required. Three lecture hours.

CS 564 Interior Planning and Drawing 3 s.h.

Lifespace analysis and design as related to residential applications. Presentation, appropriate media, equipment, and techniques will be stressed. Freehand and mechanical methods will be employed to depict floor plans, elevations, and construction details. A research project related to professional interests is required. One-hour lecture, three-hour lab per week.

CS 565 Lighting 3 s.h.
Lighting fundamentals applicable to the environmental design of residential and commercial spaces. Includes calculation methods, terminology, theory of color visibility, light source alternatives, fixture function and selection, lighting trends, and related professional organizations.

EA: Education Administration

Department of Professional Studies in Education

College of Education

EA 656 School Administration 3 s.h.
Designed as a basic course in school administration, this course is intended to serve as an introduction to the principles and practices of school administration for students who aspire to a supervisory or administrative position in public schools. Human aspects of educational administration are emphasized.

EA 660 School Finance 3 s.h.
Budgeting procedures for large and small school districts are the focus of this course. School budgeting, accounting, bonding, and various monetary applications are presented as well as the various procedures for acquiring funds. **Prerequisite:** For approved Administration and Leadership Studies candidates or permission of the instructor.

EC: Economics

Department of Economics

College of Humanities and Social Sciences

EC 501 Foundations of Modern Economics 3 s.h.
Survey of micro and macroeconomics designed for the student who is not already well grounded in the field.

EC 530 Labor Economics 3 s.h.
History, structure, and operations of trade unions and employer organizations; major federal labor legislation; collective bargaining theory; wage determination; current labor problems. **Prerequisite:** EC 501, credits of "C" or better in 6 semester hours of Principles of Economics, or permission of instructor.

EC 634 Economics of Corporate Decisions 3 s.h.
Applies economic theory to corporate decision making. Covers mathematical solutions to various profit-maximization and cost-minimization problems and examines statistical estimation of demand and cost functions. **Prerequisite:** EC 121, EC 122, MA 121 or equivalent, or permission of instructor.

ED: Education

Department of Professional Studies in Education

College of Education

ED 508 Reading in the Content Areas 3 s.h.
Provides techniques for reading specialists to work with teachers in both elementary and secondary schools for developing competencies in subject matter areas as part of the regular classroom instruction. Open, also, to classroom teachers - elementary and secondary levels.

ED 540 Supervision of Student Teaching 3 s.h.
Designed for cooperating teachers and others working with student teachers, this course provides opportunity for the development of pertinent materials and for continuous evaluation of various aspects

of the student teaching program. Stress is also given to evaluating procedures used in working with prospective teachers. Basic principles underlying an effective student teaching program are examined from a theoretical and applied viewpoint. **Prerequisites:** teaching certificate and teaching experience.

ED 595 International Study Tour in Education 3 s.h.
Provides an analysis of educational programs and methodology in selected countries. Introduces students to series of diverse educational experiences. Special attention to teaching techniques, innovative curriculum, and school organizational patterns. Teaching takes place on site in selected countries.

ED 600 Basic Foundations of Reading Education 3 s.h.
Emphases on nature of reading process, nature of learner, advancement of pupil's reading skills, how pupils learn to read, and what teachers can do when pupils fail to learn to read.

ED 601 Diagnosis and Remediation of Reading Disabilities 3 s.h.
Students appraise reading difficulties of individuals with emphases on general principles and types of diagnosis appropriate to classroom and clinic. Examination and administration of diagnostic instruments as well as methods and materials used in remediation at the elementary and secondary level are presented and demonstrated. **Prerequisite:** ED 600 (applies to reading majors only).

ED 605 Organization and Administration of Reading Programs 3 s.h.
Emphasis on patterns of organization, approaches to instruction, and use of appropriate materials which can be adopted to operation of a total school reading program in meeting individual, group, and special needs of students.

***ED 620 Reading Instruction for the Culturally Different** 3 s.h.
Emphasizes the sociological, psychological, linguistic, and educational variables that affect the culturally and linguistically different reader.

*Recommended for all programs

ED 631 Curriculum Development 3 s.h.
Students learn curriculum development by differentiating among educational goals, objectives, and learning activities. Sources of curriculum goals and objectives, such as needs assessment, philosophical models, and psychological models are studied. The design and selection of learning activities, as well as designs for evaluating the effectiveness of curriculum, are considered.

ED 650 School and Community 3 s.h.
Development and maintenance of a purposeful program of communication between the school and the community through study of selection, organization, and functions of citizen advisory committees and cooperative use of various community services.

ED 651 Recent Issues and Innovations in Education 3 s.h.
Newer trends in classroom procedure, equipment, and materials, as well as problems involved in improvement of instruction. Whenever possible, sessions are held to demonstrate and use recently developed materials. Individual research and field trips involve many of the new programs in elementary education.

ED 652 School Evaluation 3 s.h.
Current models for both formative and summative evaluations are presented with emphasis on their application to school programs and other educational projects. Prior knowledge of curriculum development and/or project proposals is helpful but not required.

ED 658 School Law and Negotiations 3 s.h.
An understanding of legal principles as they pertain to functions of personnel in public school systems and to persons engaged in education. Study of statutory enactments, review of court actions through case studies, and analysis of collective negotiation laws and cases.

ED 698 Research Seminar in Reading 3 s.h.
Designed to ensure that students will be able to read and understand reading research and statistical applications related to the field of reading. Students will interpret "t" test, AOV, repeated measures, and correlations. Emphasis is on understanding and application of statistical information and not on solving mathematical formulas.

ED 699 Independent Study in Reading Education 1-3 s.h.
The student, with cooperation of the reading faculty member with whom he/she expects to work and his/her reading faculty adviser, engages in a study individually or with a small group on some problem or field not clearly defined in existing courses.
Prerequisite: permission of coordinator.

ED 702 Reading Practicum: Diagnostic Case Studies (Clinical Experience I) 3 s.h.
Students administer and interpret a battery of diagnostic instruments, both formal and informal, to a small group of children. Emphasis is on interview and observation techniques as well as on diagnostic teaching. A needs assessment for each child is completed. All work is done under the supervision of the Reading Specialist Program faculty. **Prerequisites:** ED 600, ED 601, and ED 508.

ED 703 Reading Practicum: Remedial Case Studies (Clinical Experience II) 3 s.h.
Students complete an in-depth needs assessment as well as design and implement a remedial program for a small group of children. Emphasis is on the application of specialized remedial techniques. All work is done under the supervision of Reading Specialist Program faculty. **Prerequisites:** ED 600, ED 601, ED 508, and ED 702.

EE: Early Childhood Education **Department of Professional Studies in Education** **College of Education**

EE 660 Child Study and Assessment 3 s.h.
Designed to introduce students to issues and strategies affecting the evaluation of the three- to eight-year-old child's physical, social, emotional, cognitive, and aesthetic development. Students will conduct a case study of a young child that includes naturalistic observation, checklists, rating scales, tests, and portfolio assessment of children's work. **Prerequisites:** EL 655 or equivalent.

EE 661 History and Philosophy of Early Childhood Education 3 s.h.
Introduces students to the historical and philosophical foundations of the field of early childhood education. Major historical events, social trends, and philosophical perspectives from around the globe that have shaped the education of the very young will be addressed. Students will examine contemporary circumstances in early childhood education in terms of the time-honored traditions and important insights from leaders in the profession.

EE 664 Early Childhood Curriculum 3 s.h.
Examines the developmental continuity of educational programs for the young child, ages three through eight. Materials, strategies, concepts, and learning experiences that are suited to each child's

developmental level will be selected, planned, applied, and evaluated by students.

EE 665 Issues and Trends In Early Childhood Education 3 s.h.
Designed to provide early childhood educators with a child advocacy perspective on contemporary social forces, professional issues, and public policy trends affecting young children. Students will develop skills in identifying key issues using problem-solving strategies, communicating ideas, and functioning as change agents within educational institutions. Interpersonal skills and collaborative relationships with colleagues, administrators, politicians, parents, and community agencies will be emphasized.

EE 762 Early Childhood Field Study 3 s.h.
Emphasis on the role of early childhood theory and research on classroom practice. Students will observe, participate, and collect field notes in an early childhood setting. Findings will be synthesized in a written report and presented to the class.
Prerequisites: EE 660, EE 661, and EE 664.

EE 766 Early Childhood Program Evaluation 3 s.h.
Emphasizes the study and evaluation of programs designed for preschool through the primary grades. Students will assess early childhood curricula, review relevant research, and use evaluation frameworks to assess program quality. Cross-cultural comparisons of early childhood curricula in the United States and programs from other cultures and nations will be studied. **Prerequisites:** EE 661, EL 655, EE 664, or permission of instructor.

EL: Elementary Education **Department of Professional Studies in Education** **College of Education**

EL 641 Recent Trends in Social Studies 3 s.h.
Specific problems with curriculum, teaching, and learning experiences and evaluation are stressed. Each student will research a special problem or area of interest.

EL 643 Resource Materials in Elementary Science 3 s.h.
An introduction to underlying philosophy and use of materials of several of the current national curriculum programs in elementary science. Emphasis is placed on the following programs: (1) Science: A Process Approach (SAPA), (2) Elementary Science Study (ESS), (3) Science Curriculum Improvement Study (SCIS), and (4) Conceptually Oriented Program in Elementary Science (COPES), including microteaching techniques and development and preparation of individualized self-instruction modules. Students are required to work with various program materials.

EL 644 Recent Trends in Language Arts 3 s.h.
Designed to help students to direct more effective communication through study of problems, recent trends, and contributions of research in the broad fields of listening and oral and written communication.

EL 647 Resource Materials in Children's Literature 3 s.h.
Evaluation and selection of literature as a classroom resource for teaching and learning, including illustrations, folklore, poetry, modern and traditional fiction, and nonfiction.

EL 648 Creativity and the Elementary School Child 3 s.h.
Includes a study of creative thinking and ways to develop creativity in children, including strategies and techniques to use in the classroom. Ways of measuring creativity and analyzing the role of the teacher are included. Students are encouraged to develop their own creativity.

- EL 681 Special Topics in Education** 3 s.h.
Designed for the students who wish to do independent research in special areas.
- EL 698 Supervised Internship** 6 s.h.
A carefully planned, field-based, internal work experience proposed by the advanced graduate student to extend professional competence, subject to approval by advisory committee. Registration by permission only.
- EL 699 Independent Study in Elementary Education** 1-3 s.h.
Students select one or more topics which are of critical importance in elementary education and meet staff members for independent reading, study, analysis, and evaluation. Registration only by permission of Graduate Committee.
- EL 700 Writing for Professional Publication** 3 s.h.
Designed to enhance the scholarly writing skills of doctoral students in education. Each student will write a conference proposal and a professional journal article. Manuscripts authored by the students will be submitted for peer review and for presentation or publication.
- EL 710 Critical Analysis of Issues and Innovations in Education** 3 s.h.
Students analyze and evaluate current issues and innovations in the field of education. Reformers and their critics are analyzed in terms of their role as change agents. Programmatic and systematic reforms in education are studied and relationships drawn between research, policymaking, and implementation. **Prerequisites:** two of FE 611, FE 612, or FE 613, or the equivalents.
- EL 715 Advanced Topics in Human Development and Learning** 3 s.h.
Students synthesize, analyze, and evaluate developmental theory, participate in a research project dealing with human development, and author a publishable, high-quality manuscript in which developmental theory/research is used to address an educational issue.
- EL 720 Curriculum Analysis** 3 s.h.
Provides students with a framework for the systematic analysis of curriculum from the context of social, historical, and philosophical foundations and theory and research in the field. Emphasis will be on curricular evaluation in the context of the theoretical foundations of curriculum. **Prerequisite:** EL 631 or equivalent.
- EL 725 Analysis of Effective Instructional and Supervisory Techniques** 3 s.h.
Emphasizes critical review and analyses of relevant theory and research. Topics include theory and research on learning styles, observation of classroom behavior, analysis of teaching strategies, and knowledge of content.
- EL 735 Elementary Education Doctoral Seminar** 1 s.h.
A forum for the discussion of student/faculty research and contemporary issues in education. Students assume responsibility for presenting and critiquing research and facilitating a research-based discussion of contemporary issues in education. Taken for one credit in two different terms. **Prerequisite:** Candidacy for the degree.
- EL 740 Pluralism, Culture, and the Elementary School Child** 2 s.h.
Provides students with a philosophical and sociological understanding of a pluralistic society and how pluralism and the phenomenon of culture affect the education of elementary school children.
- EL 741 Elementary Education in Urban Environments** 1 s.h.
Develops understanding of particular social and cultural systems of urban settings and provides a systematic way of using knowledge to address educational problems that are unique to urban environments. **Prerequisite or corequisite:** EL 740.
- EL 742 Elementary Education in Rural Environments** 1 s.h.
Provides students with the opportunity to analyze ethnocentrism, cultural isolation, and belief systems typical of rural settings. Focus will be on implications for curriculum and instruction in rural settings. **Prerequisite or corequisite:** EL 740.
- EL 743 Elementary Education in Bilingual/Multilingual Settings** 1 s.h.
Examines educational models and research on bilingual and multilingual education. Students are encouraged to formulate a conceptual framework for bilingual or multilingual education in a designated school or district. **Prerequisite or corequisite:** EL 740.
- EL 750 The Acquisition of Literacy** 3 s.h.
Examines the concept of literacy and how it is acquired. Evaluation of research and theory regarding strategies used to support a developmental view of literacy. Emphasis given to whole language processes of literacy acquisition. **Prerequisites:** ED 600 and ED 601.
- EL 755 Reading Theory and the Elementary School Reading Teacher** 3 s.h.
Study of the psychological bases that affect and influence the process of reading. Cognitive processes in reading are analyzed along with their applications at various stages of learning. **Prerequisites:** ED 600 and ED 601.
- EL 760 Issues and Processes in Curricular Change** 3 s.h.
Provides students with processes to initiate and develop curriculum change. Course focuses on understanding of theory as applied through examination of relevant case studies and examples within particular school settings. **Prerequisite:** EL 720.
- EL 770 Seminar in Special Problems in Reading** 3 s.h.
Students explore such topics as reading disabilities, preschool reading instruction, adult literacy, evaluation of compensatory programs, implications of current reading research findings, reading in-service programs, whole language and reading, and the reading/writing connection. **Prerequisites:** ED 600 and ED 601.
- EL 780 Seminar in Advanced Research Methods** 3 s.h.
Doctoral students refine and apply advanced knowledge and skills toward the design of the doctoral dissertation. Emphasizes the application of quantitative and qualitative approaches within school or educational settings.
- EL 798 Supervised Doctoral Internship** 3 s.h.
Applied field experience chosen by doctoral students with the approval of the dissertation advisory committee. **Prerequisite:** permission only.
- EL 850 Thesis** 3 or 6 s.h.
For the student writing the thesis. Should be scheduled for the semester in which the student plans to complete his/her work. All thesis writing involves a committee composed of the student's adviser and two additional faculty members.
- EL 950 Dissertation** 9 s.h.
Students preparing a doctoral dissertation for credit must register for this course. Number of credits assigned and the extent of time for which research activity is scheduled depend on nature and scope of student's research problem and his/her general doctoral program.

EL 951 Extended Dissertation

1 s.h.

Note: Credits for both thesis and dissertation, if not completed during the semester scheduled, are recorded as a grade of “R,” *research in progress*. They remain so until the project is approved. They *do not* automatically revert to the grade “F” in a specific length of time. Also, thesis and dissertation credits can be programmed above the regular load.

EM: Elementary and Middle School Mathematics

Department of Mathematics

College of Natural Sciences and Mathematics

EM 517 Introduction to Probability and Statistics 3 s.h.

Introduces students to elementary concepts of probability which will enable them to analyze data, make predictions, and determine what concepts may be used with children. **Prerequisite:** MA 152 or equivalent.

EM 520 Pre-Calculus Mathematics I 3 s.h.

Examines the function concept as applied to elementary real-number functions and graphing techniques for these functions. Topics include real-number functions such as absolute value, step, linear quadratic and other polynomial functions, trigonometric and other periodic functions, exponential logarithmic functions, and all other inverse functions. Students will examine curricular materials that develop function concepts in grades K-8. **Prerequisite:** MA 152 or equivalent.

EM 556 Principles of Geometry I 3 s.h.

Students become acquainted with an informal, intuitive approach to geometry. Activities and materials for teaching geometrical concepts to children are an integral part of the course. **Prerequisite:** MA 152 or equivalent.

EM 557 Introduction to Number Theory 3 s.h.

Introduction to topics in elementary number theory, including basic operations and properties of integers; divisibility properties of integers; modular arithmetic and congruences; diophantine equations; interesting relationships among numbers; applications of number theory in elementary school mathematics. **Prerequisite:** MA 152 or equivalent.

EM 558 Introduction to Logic and Logical Games 3 s.h.

Introduction to some basic ideas, terminology, and notation of logic. Topics considered: symbolic logic, with special emphasis on algebra of propositions; applications of Boolean algebra, such as algebra of sets and switching circuits; and introduction to quantification theory and its value in determining validity of mathematical arguments, inference schemes, and logical puzzles and a consideration of other topics in logic suitable for a K-8 mathematics curriculum. **Prerequisite:** MA 152 or equivalent.

EM 559 Computer-Related Topics in the Elementary and Middle School 3 s.h.

This course is intended to provide teachers with the concepts and techniques necessary to teach computer-related topics to children in the elementary and middle schools. **Prerequisite:** MA 152 or equivalent.

EM 571 Basic Concepts of Algebra 3 s.h.

Concepts of basic algebraic structure such as group, ring, integral domain, field, and vector space are studied within the context of the mathematical maturity of the student. Other topics include relations

and functions, systems of equations, and inequalities. Consideration given to development of these concepts in the mathematics curriculum. **Prerequisite:** MA 152 or equivalent.

EM 581 Special Topics 3 s.h.

Special Topics which go beyond the scope of regular offered courses. Offered on basis of student interest and available staff. The student may take more than one Special Topics offering with the written approval of the adviser. **Prerequisite:** MA 152 or equivalent.

EM 601 Basic Concepts in Mathematics I 3 s.h.

For students who have not taken MA 151 or an equivalent course as undergraduates. Will give good understanding of development and structure of systems of numeration up to and including the set of real numbers.

EM 602 Basic Concepts in Mathematics II 3 s.h.

For students who, as undergraduates, have not taken MA 152 or an equivalent course. Will give a basic understanding of algebraic properties of different mathematical systems and help students to understand how properties of systems are interrelated. **Prerequisite:** EM 601 or equivalent.

EM 650 Curriculum and Instruction in Elementary School Mathematics 3 s.h.

The design of this course is to familiarize the elementary/middle school teacher with the philosophical and psychological issues that guide the development of mathematics curricula. Topics include a history of the development of mathematics curriculum; innovative curricula that have had impact on teaching and learning; ways of implementing a contemporary program; and criteria for textbook selection. **Prerequisite:** Methods course in teaching mathematics or consent of instructor.

EM 651 The Laboratory Approach to Teaching Mathematics 3 s.h.

Development of the lab approach to the teaching of mathematics. Includes an intensive study of techniques, organization and supervision of laboratory activities, and the practical design, construction, and implementation of materials. **Prerequisite:** Methods course in teaching mathematics or consent of instructor.

EM 652 Diagnosis and Remedial Teaching of Mathematics 3 s.h.

Examines why some children have difficulty in learning mathematical concepts and presents tools and techniques for diagnosing and remediating common difficulties in elementary and middle school mathematics. Course valuable for those teaching in elementary, middle school, or remedial programs. **Prerequisite:** Methods course in teaching mathematics or consent of instructor.

EM 653 Mathematics for the Gifted Student 3 s.h.

The course will examine different approaches for mathematically gifted students. As a result, the students will become familiar with resources and elementary programs designed for use in either regular classrooms or special classes for the gifted. **Prerequisite:** Methods course in teaching mathematics or consent of instructor.

EM 654 Teaching Problem Solving in the Elementary and Middle School 3 s.h.

This course is intended to teach teachers how to become better problem solvers and teaches problem-solving techniques appropriate for grades K-8. **Prerequisite:** Methods course in teaching mathematics or consent of instructor.

EM 655 Mathematics for Early Childhood 3 s.h.

This course studies child-centered, activity-oriented mathematics programs for early childhood education. The course focuses on implementing research to help children develop understanding and insight into basic concepts of mathematics through the use of manipulative materials. Topics include prenumber activities, number activities, numeration, operations on whole numbers, estimation, rational numbers, geometry, measurement, probability, statistics, and problem solving. **Prerequisite:** MA 152 or equivalent.

EM 681 Special Topics 3 s.h.

Special topics which go beyond the scope of regular offered courses. Offered on basis of student interest and available staff. The student may take more than one Special Topics offering with the written approval of the adviser. **Prerequisite:** Methods course in teaching mathematics or consent of instructor.

EM 698 Supervised Internship 3 s.h.

A professional work experience in a cooperating school district under the supervision of designated public school personnel, subject to review and evaluation by a university faculty member. Registration by permission only.

EM 699 Elementary Math—Independent Study 1-6 s.h.

Under the guidance of a faculty member, a student may study some area of mathematics or mathematics education not covered in the regular courses.

EM 850 Thesis 3 s.h.

EN: English

Department of English

College of Humanities and Social Sciences

EN 518 Literature for Adolescents 3 s.h.

This course offers prospective secondary English teachers a survey of the literature adolescents choose to read, enjoy, and find relevant to their lives. Includes literature that offers psychological and sociological perspectives on adolescents.

EN 581 Special Topics in Language and Literature 3 s.h.

Allows students to pursue subjects such as textual criticism, prosody, and computers and literature not covered in existing courses.

EN 630 Research on the Teaching of Literacy and Literature 3 s.h.

Examines theory and research in literacy, reading and responding to literature and other forms of writing, and the teaching of young adult and other relevant works of literature. Includes application of theory and research to classroom practices.

EN 641 Topics in ESL Pedagogy 3 s.h.

Explores a single topic in depth. Topics, announced in advance, include such areas as ESL Testing, Teaching Listening Comprehension for ESL Students, Teaching English for Specific Purposes, and Teaching Writing for ESL Students.

EN 674 Bibliographical Methods in English 3 s.h.

Practical training in special methods and materials of research in English.

EN 675 Literature and the International Student 3 s.h.

Develops the reading, writing, listening, and speaking skills needed for success by the international student in the graduate study of literature in the American university. Examines the principles of literary analysis, research, and documentation in the United States and orients the student to the American library system and the American college classroom.

EN 676 Critical Approaches to Literature 3 s.h.

Focuses on theoretical and applied approaches to literary criticism. Introduces such approaches as they have been historically developed and are currently practiced and considers how familiarity with a variety of critical methods enhances the appreciation and teaching of literature.

EN 681 Special Topics 3 s.h.

Courses relating to specialized interests in literature, rhetoric, or linguistics which fulfill special needs or interests. May become permanent course offerings.

EN 690 Writing as a Way of Learning 3 s.h.

The workshop examines the theoretical relationship between thought and writing, with specific attention to ways this relationship underlies learning in all disciplines. The course, which functions as part of the Southcentral Pennsylvania Writing Project, involves reading, writing, and demonstration of pedagogical methods.

EN 692 American English Grammar 3 s.h.

The study of phonology, morphology, syntax, and semantics of present-day American English, using various approaches to the analysis of grammar and usage.

EN 693 Seminar in Teaching English in the Secondary School 3 s.h.

Explores recent developments in teaching of language, compositions, and literature.

EN 694 Observation in Teaching English 3 s.h.

Surveys instruments to observe classroom teaching behavior and provides practice in the use of observation instruments. Surveys research on classroom teaching and design. Emphasizes awareness of teaching behaviors and their consequences in English classrooms for native and non-native speakers of English.

EN 696 Internship in ESL/EFL 3 s.h.

Consists of one semester of supervised teaching, tutorial activities, and materials preparation for non-native or limited English-speaking students. The purpose of the practicum is to demonstrate the candidate's preparation for teaching English as a second or foreign language. **Prerequisite:** Permission of the director of Graduate Studies in Rhetoric and Linguistics.

EN 698 Internship 3 s.h.

Practical experience in the student's area of interest, working under professional supervision on the job. Special permission only, dependent upon needs of student's program as well as personal and academic qualifications.

EN 699 Independent Study 1-3 s.h.

Study in depth of topics not available through regular course work. Student works with supervising professor on carefully planned, student-initiated project. Prior approval necessary.

EN 710 Research Methodology in Rhetoric and Linguistics 3 s.h.

Interdisciplinary dimensions of the transmission of literacy and its position as a domain for scientific inquiry, including bibliographical resources for the study of rhetoric and linguistics.

EN 715 Qualitative Research 3 s.h.

Involves both reading about and training in qualitative research methods such as participant observation, interviewing, coding, and analysis. The course also covers dissemination of research findings. **Prerequisites:** EN 710 and EN 730 or EN 740.

EN 720 Linguistics and the English Teacher 3 s.h.

Introduces the principles and uses of linguistics for the teaching of English.

EN 721 Psycholinguistics 3 s.h.

Studies the psychological bases and processes of language acquisition and use, with emphasis on the relevance of current research for language learning and teaching. **Prerequisites:** EN 710 and EN 720.

EN 722 Sociolinguistics 3 s.h.

Studies language in its social context, including such topics as social and regional variations, language change, and language planning and the implications of language variety for the transmission of literacy. **Prerequisites:** EN 710 and EN 720.

EN 730 Teaching Writing 3 s.h.

Studies characteristics of the writing process and of the basic writer, methods for the evaluation of writing, and approaches to the teaching of writing.

EN 731 The Rhetorical Tradition and the Teaching of Writing 3 s.h.

Surveys the rhetorical tradition from classical Greece to the present day, with emphasis on continuing philosophical and professional issues.

EN 732 Advanced Seminar in Composition Theory 3 s.h.

Explores a single topic in depth. Topics, announced in advance, include such areas as approaches to the teaching of style, writing across the curriculum, the evaluation of composition instruction, the development of the writing process in children, computers in composition, writing in the professions, and discourse analysis. May be taken more than once. **Prerequisites:** EN 730 and EN 731.

EN 736 Reading Theory and the College English Teacher 3 s.h.

Examines the psycholinguistic and ethnographic research on the fluent reading process of native and non-native college readers, relevant to the teaching of reading and writing for academic and literary purposes.

EN 740 TESL/TEFL Methodology 3 s.h.

Surveys current theory and practice in teaching English to non-native speakers. Includes traditional and innovative approaches, methods, and techniques for teaching all the language skills at various educational levels.

EN 741 ESL Materials and Media 3 s.h.

Treats current principles of syllabus design, instructional materials, and systems for observing and evaluating the ESL-EFL classroom. Emphasis is placed on preparing or adapting language lessons as well as producing materials in audio, visual, and computer-assisted media for particular language learners and situations and demonstrating their effectiveness. **Prerequisite:** EN 740.

EN 742 Cross-Cultural Communication 3 s.h.

Investigates cultural behaviors, assumptions, values, and conflicts surrounding communication across cultures in the context of teaching English as a second or foreign language at all levels.

EN 743 Second Language Acquisition 3 s.h.

Introduces current research in second language acquisition especially of English. Focuses on prominent research trends in the study of the language learner, the process of acquisition, and the interaction of learner, language, and context. **Prerequisites:** EN 720 and EN 740.

EN 751 The History and Theory of Criticism 3 s.h.

Studies the major critics of the Western tradition from classical times through twentieth-century structuralism. The course examines the texts and issues central to criticism in relation to the contemporary concerns and practices of the literature teacher and scholar.

EN 752 Literary Theory for the Teacher and Scholarly Writer 3 s.h.

Focuses on contemporary literary theory and its applications to the professional concerns of English teachers and scholars. Examines theoretical and critical approaches as they are currently practiced and applied, both in the classroom and in writing for publication and professional presentation.

EN 760 Teaching College Literature 3 s.h.

Examines current research on teaching college literature and involves ongoing observation and practice of teaching strategies. Special attention is given to the impact of critical theory and such issues as canon, race, class, and gender in specific classroom settings.

EN 761 Topics in American Literature Before 1870 3 s.h.

Studies major figures, movements, or topics in American literature from the Colonial Period through 1870. The content of the course will be determined by the individual instructor and announced in advance.

EN 762 Topics in American Literature Since 1870 3 s.h.

Studies major topics, authors, and movements in American literature from 1870 to the present. Specific course content is chosen by the instructor and announced in advance.

EN 763 Topics in British Literature Before 1660 3 s.h.

Studies major figures, movements, or topics within the period. The specific content of the course is determined by the instructor and announced in advance.

EN 764 Topics in British Literature Since 1660 3 s.h.

Studies major figures, movements, and topics in British literature within the period 1660 to the present. Content of the course will be determined by the instructor and announced in advance.

EN 765 Topics in Literature as Genre 3 s.h.

Examines one literary genre (such as novel, drama, or film), its development, and its current practice and theories. The course also surveys the major recent critical approaches to the genre.

EN 766 Topics in Comparative Literature 3 s.h.

Introduces the theory and methods of comparative literary analysis. Topics include the relationships between literatures of different countries, between literary genres, and between literature and other related fields. The specific course content is chosen by the instructor and announced in advance.

EN 771 Topics in Postmodern Literature 3 s.h.

Investigates the postmodern reaction to the modern literary tradition and the experimentation it engendered. Focuses on how postmodern critics and writers have responded to modernist manifestations of character, narrative, and theme and explores the critical, pedagogical, and philosophical implications and assumptions of postmodern literature, assessing its role in contemporary culture and thought.

EN 772 Topics in Women's Literature 3 s.h.
Reexamines nineteenth-century works by women in light of feminist perspectives. Studies twentieth-century works within and outside feminine and feminist traditions. Also considers works by black, Chicano, Native American, and Asian-American women.

EN 773 Topics in American or British Minority Literature 3 s.h.
Examines the literature of one or more American or British minorities (for example, Native Americans, immigrants, blacks, Chicanos). The focus and subject matter of the course will be chosen by the faculty member and announced in advance.

EN 781 Special Topics 3s.h.
Courses relating to specialized interests in literature, rhetoric, or linguistics which fulfill special needs or interests. May become permanent course offerings.

EN 783 Seminar: Literary Theory Applied to Major American Author or Theme 3 s.h.
Advanced, independent work in a seminar format. The course will emphasize the production of a research paper of publishable quality. Specific content for the course—a major author or specific theme in American Literature—will be chosen by the instructor.

EN 784 Seminar: Literary Theory Applied to British Author or Theme 3 s.h.
Draws on knowledge and critical skills from core courses and traditional and special literature courses for advanced, independent work. Focus is on a single major author or well-defined theme in British literature chosen by the instructor. Each student conducts practice teaching and produces a research essay suitable for submission for publication or presentation at a conference.

EN 785 Seminar: Comparative Literary Theory Applied to Traditional and Special Literatures 3 s.h.
Explores and applies literary theory, criticism, and the theories and methods of comparative literature to traditional and special literatures. Students may expect to investigate, from various critical perspectives, conflicting social and literary values. The specific course content is chosen by the instructor and announced in advance.

EN 799 Independent Study 1-3 s.h.
An in-depth investigation of topic or area related to the student's doctoral program but not available through regular course work. Independent study is initiated by the student and supervised by a faculty member in the area of study. Prior approval by the director of the student's doctoral program is required.

EN 850 Thesis 1-6 s.h.

EN 950 Dissertation 12 s.h.

EN 951 Extended Dissertation 1 s.h.

Note: Special Topics, Topics in Language and Literature and Major Writers, and Seminars may be scheduled more than once, because subject matter will change with each offering of the course. More complete course descriptions are available from the department.

EP: Educational Psychology **Department of Educational and School Psychology** **College of Education**

EP 573 Psychology of Adolescent Education 3 s.h.
Concerned with study of significant characteristics of adolescence and with understanding the role of cultural influences on formation of behavior.

EP 576 Behavior Problems 3 s.h.
Explores behavior problems encountered in classroom situations and gives cause, characteristics, and some preventative and remedial techniques, including those appropriate for managing students with learning and behavioral exceptionalities.

EP 578 Learning 3 s.h.
Explores learning theories and educational application in working with learning problems in the classroom.

EP 604 Advanced Educational Psychology 3 s.h.
An upward extension of educational psychology with a systematic review of current research and learning theory with emphasis on classroom applications including studies of the organization, administration, and operation of schools.

EP 616 Applied Educational Research Methods 3 s.h.
Develops skills needed to engage in applied educational research using standard experimental research and evaluation designs, typical measurement approaches, and parametric statistical procedures. A practical problem presentation mode enhances an integrated holistic approach to design, sampling, measurement, statistics, hypothesis testing, and interpretation of results. A microcomputer statistical package is used to assist in the analysis of data.

EP 618 Interpretation of Educational and Psychological Tests 3 s.h.
Designed to provide the individual with information necessary to understand, evaluate, and interpret results of educational and psychological tests accurately and meaningfully.

EP 681 Special Topics in Educational Psychology 3 s.h.
Designed for those students who wish to do independent research in special areas. **Prerequisite:** Departmental chairperson permission.

EP 711 Introduction to School Psychology 3 s.h.
The professional responsibilities of the school psychologist are explored in relation to ethical and legal aspects, state and federal litigation and legislation, dynamics and organization of regular and special education, issues in multicultural and exceptional child education, and provision of assessment, placement, and intervention services in the public schools. **Prerequisite:** Permission of the instructor.

EP 712 Individual Evaluation I 3 s.h.
Individual testing and professional competency in Stanford-Binet Scale, Wechsler Scales for children, and related tests of intelligence. **Prerequisite:** Permission of the instructor.

EP 713 Individual Evaluation II 3 s.h.
Individual testing and professional competency in Stanford-Binet Scale, Wechsler Scales, and other pertinent individual diagnostic tests. **Prerequisite:** EP 712 or permission of the instructor.

EP 715 Doctoral Seminar in Applied Educational Research 3 s.h.
Develops skills needed to engage in applied educational research using clinical and practical research/evaluation designs, measurement approaches, and nonparametric statistical procedures. A practical problem presentation mode enhances a consolidation of design, sampling, measurement, nonparametric statistics, hypothesis testing, and interpretation of results. Microcomputer statistical package use assists in the analysis of data. **Prerequisite:** EP 616.

EP 716 Doctoral Seminar in Advanced Educational Research 3 s.h.
Provides an overview of complex educational research and evaluation designs, measurement approaches, statistical procedures, hypothesis testing, and interpretation of results. Topics include the philosophy and ethics of research, mixed hierarchical design, profile analysis, factorial validity estimation, factor analysis, multivariate analysis of variance, discriminant function analysis, path analysis, meta-analysis, power, robustness, and randomization tests. Statistical packages will be used to assist data manipulation and analysis. **Prerequisite:** EP 715.

EP 742 Neuropsychology of Children's Learning Disorder 3 s.h.
A neuropsychological approach to the identification of children with learning disorders will be discussed. Such factors as etiology, epidemiology, subtyping, diagnoses, and remediation will be considered. Students will learn the theoretical framework necessary to understand the factors underlying learning disorders in children. **Prerequisite:** EP 712 or permission.

EP 749 Practicum I 3 s.h.
This course is designed to provide school psychology students with an opportunity to complete a series of structured observations and interviews in school and community settings pertinent to their understanding of the organization of these settings and the functioning of the variety of professionals working in these settings. These experiences acquaint students with diverse types of children and refine their understanding of critical issues confronting education. **Prerequisite:** For approved school psychology candidates or permission of the instructor.

EP 750 Practicum II 3 s.h.
Practicum II provides opportunities for students to practice, under close supervision, the application of knowledge and specific clinical skills in the resolution of individual learning and behavior problems of children and youth. **Prerequisite:** For approved school psychology candidates or permission of the instructor.

EP 751 Internship 6 s.h.
The internship is a 1,200-hour supervised field experience designed to afford the student the opportunity to work with diverse client populations, a range of problems, and different types of human service programs, using varied assessment and intervention methodologies. Students demonstrate, under supervision, their ability to integrate knowledge and applied skills in providing a broad range of psychological services in the schools, as well as to acquire new knowledge and skills. At least one half (600 hours) of the internship shall be in a school setting. **Prerequisite:** For approved school psychologist candidates. Completion of all coursework, practica, and comprehensive examinations.

EP 752 Doctoral Internship 3 s.h.
Supervised field experience in psychological procedures and practices in an educational setting and/or facility appropriate to the special professional interests of the student. **Prerequisite:** School psychology major; permission of instructor.

EP 753 Child Neuropsychology 3 s.h.
Examines brain-behavior relationships and neurodevelopmental

functioning in children. The neuropsychological principles necessary to assess the educational, cognitive, and behavioral functioning of children in relation to the development of remedial programs will be discussed. **Prerequisite:** EP 712 or permission of the instructor.

EP 762 Crisis Counseling and Consultation in Instructional Settings 3 s.h.
A systematic study of major techniques of counseling and psychotherapy and application of principles of group dynamics to educational settings. **Prerequisite:** Permission of the instructor.

EP 763 Assessment of Personality and Behavior Problems of Children 3 s.h.
An introduction to various personality and behavior assessment techniques currently used. **Prerequisite:** For approved school psychologist candidates or permission of the instructor.

EP 764 Seminar in School Psychology I 3 s.h.
An examination of practices, trends, and issues in a specialized area of diagnosis. The areas to be examined will be based on the predetermined interests of the students and the expertise of the available faculty. **Prerequisite:** Permission of the instructor.

EP 765 Seminar in School Psychology II 3 s.h.
An examination of practices, trends, and issues in a specialized area of treatment or remediation. The areas to be examined will correspond to those covered in EP 664. The focus of the seminar will be to develop the student's understanding and skills in implementing appropriate treatment and remedial strategies in home, school, and clinic settings. **Prerequisite:** Permission of the instructor.

EP 766 Doctoral Seminar: Research Issues in Child Neuropsychology 3 s.h.
Examines research issues related to the application of neuropsychology in the school setting. Specifically, students will critique research articles, identify contemporary research issues, and write a research paper on a relevant educational issue. **Prerequisite:** EP 742 or equivalent, or permission of the instructor.

EP 777 Seminar in Family-School Relations 3 s.h.
Focuses on selected aspects of a wide range of issues related to the contemporary American family as they affect the behavior of children and their functioning within the public schools. Parent consultation and training strategies will be emphasized. **Prerequisite:** permission of the instructor.

EP 850 Thesis 3 s.h.

EP 950 Dissertation 9 s.h.

EP 951 Extended Dissertation 1 s.h.

EX: Education of Exceptional Persons **Department of Special Education** **and Clinical Services** **College of Education**

EX 500 Education of Exceptional Children in Regular Classes 3 s.h.
Intended for graduate students who are teaching regular classes and other school personnel who do not have a background of formal course work in the general area of exceptionality. Included will be specific vocabulary and etiology of handicapping conditions as they relate to regular class teachers in understanding the nature of problems. Concepts of mainstreaming and resource room teaching will be included.

EX 515 Preschool Education for Children with Disabilities 3 s.h.

Provides information on assessment, intervention strategies, curriculum, and prescriptive planning for preschool children with disabilities. Serves as a course for departmental majors who are specifically interested in early childhood education, as an elective for other interested students in related fields, and as a priority course for Early Childhood Education majors. **Prerequisites:** Certification or EX 650 or EX 111 or EX 300.

EX 516 Education of Persons with Emotional or Behavioral Disorders 3 s.h.

Focuses on major theoretical positions regarding etiology of emotional and behavioral disorders, definition and identification of the population, and educational approaches. Reviews research in the field, including current issues, trends, practices, and services. **Prerequisites:** Certification or EX 650 or EX 111 or EX 300. Designed to meet teacher certification requirements.

EX 517 Education of Persons with Mental Retardation or Developmental Disabilities 3 s.h.

Provides guidelines and methods for working with the extremely disabled in educational settings. Emphasizes methods of providing stimulation of basic skill development in areas of motor, perceptual, cognitive, language, and social skills. **Prerequisites:** Certification or EX 650 or EX 111 or EX 300.

EX 518 Education of Persons with Physical or Multiple Disabilities 3 s.h.

Focuses on major theoretical positions regarding etiology of a wide and diverse range of physical/multiple disabilities, the definition and identification of the population, and educational approaches. Reviews research in the field, including current issues, trends, practices, and services. **Prerequisites:** Certification or EX 650 or EX 111 or EX 300.

EX 519 Education of Persons with Brain Injuries or Learning Disabilities 3 s.h.

Focuses on major theoretical positions regarding etiology of neurological and learning disabilities, definition and identification of the population, and educational approaches. Reviews research in the field, including current issues, trends, practices, and services. **Prerequisites:** Certification or EX 650 or EX 111 or EX 300. Designed to meet teacher certification requirements.

EX 524 Language Disabilities and the Language Processes 3 s.h.

Provides knowledge, understanding, and skill in evaluating children with learning and language disabilities, with a major emphasis on language processes.

EX 580 Seminar in Special Education 3 s.h.

Students will review critically recent developments in the field. Opportunity is afforded for independent readings and limited research reports. A student may identify a topic for subsequent development as his/her thesis or research project. **Prerequisites:** EX 650, EX 639, and EX 640.

EX 581 Special Topics

EX 599 Independent Study in Special Education 1-3 s.h.
Individual students develop research studies in consultation with a faculty member. Departmental consent required.

EX 650 Exceptional Children and Youth 3 s.h.

Surveys characteristics, definition/identification, and service delivery models for children and youth with disabilities or who are gifted/talented. Considers state and federal policies governing special education program service delivery, as well as the legal rights of individuals with disabilities.

EX 651 Vocational Preparation and Transition for Youth with Disabilities 3 s.h.

Designed to develop competencies in the skills necessary to help students with disabilities make a successful transition from school to eventual employment.

EX 652 Assessment of Persons with Disabilities 3 s.h.

Provides students with an understanding of the diagnostic tools and techniques used to evaluate students with disabilities. Examines formal and informal assessment measures used in the diagnosis and remediation of educational problems. Emphasizes those skills expected of a special education teacher as a member of a multi/interdisciplinary team.

EX 653 Research Seminar in Special Education 3 s.h.

Provides enrollees with opportunities to focus on current research in special education. Focus of research may change each term in accordance with preferences of instructor and students. Emphasizes critical analysis of research, classroom applications of that research, and implications for future research.

EX 654 Advanced Instructional Design in Special Education 3 s.h.

Emphasizes effective instructional approaches appropriate for the education of students with mild to profound disabilities. Considers educational priorities and effective teaching practices in developing and evaluating individualized, integrated interventions.

EX 655 Professional Collaboration and Team Building for Special Educators 3 s.h.

Focuses on strategies for collaborating with families, regular and special educators, paraprofessionals, and other service providers in the school and community.

EX 685 Practicum and Internship 3-9 s.h.

Advanced students are offered guided practicum experiences in selected schools, residential institutions, clinics, or agencies. Internships or supervised student teaching are planned individually. Students analyze, evaluate, and report on their experiences.

FE: Foundations of Education

Department of Foundations of Education

College of Education

FE 514 Comparative Foundations of Education 3 s.h.

Educational theories and practices in different nations will be studied. Educational purposes, curriculum, methods, administration, school systems, teacher education, and other educational features in America will be analyzed, evaluated, and compared.

FE 515 Curriculum Development 3 s.h.

Analysis of philosophical, sociological, and psychological basis for creation of curriculum patterns. K-12. Includes utilization of technological devices, critical examination of basic concepts underlying determination of objectives, selection and organization of subject matter, and learning experiences in general. Current curriculum research will be analyzed, as well as existing instructional materials and programs.

FE 581 Special Topics 3 s.h.

FE 611 Historical Foundations of Education 3 s.h.
Study of historical development of American education. European influences on philosophies and practices of American schools will serve as a background. Emphasis on development of education in America as influenced by various individuals and schools of thought. Historical trends will be related to current problems and practices in education.

FE 612 Philosophical Foundations of Education 3 s.h.
Analysis and evaluation of basic philosophies and their impact upon education. Nature, value, means, and ends of education and some other fundamental phases of schooling will be thoroughly examined. Stress on essentials enhancing an individual working philosophy of education and on basic ideas heightening a sound philosophy for American schools.

FE 613 Social Foundations of Education 3 s.h.
Social and cultural forces which influence education. Particular stress on current problems as they relate to entire educational systems and to curricular problems and practices in today's schools.

FE 699 Independent Study 1-6 s.h.

FI: Finance **Department of Finance and Legal Studies** **Eberly College of Business**

FI 581 Special Topics in Finance 3 s.h.
Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. **Prerequisite:** permission of instructor and College of Business graduate coordinator.

FI 630 Financial Management 3 s.h.
An extension of basic managerial finance, dealing with theory and practice of analyzing companies, financial planning, capital budgeting, management of working capital, and obtaining funds for the corporation. **Prerequisite:** FI 310.

FI 631 Advanced Financial Management 3 s.h.
Purpose is to provide the business manager with various approaches and methods for solving capital budgeting decisions and evaluating investment proposals. Topics will include capital budgeting techniques and applications, decisions under certainty and uncertainty, capital rationing, and methods of evaluating and classifying investments. **Prerequisite:** FI 630.

FI 635 Principles of Investments in Securities 3 s.h.
Introduces many forms of existing investment policies. Attention is given to operation of stock markets, concepts and terminology of investing, mutual funds and their function, investment clubs, and problems involved in making investments through brokers, bankers, and stock promoters. **Prerequisite:** FI 630.

FI 699 Independent Study in Finance 1-3 s.h.
Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. **Prerequisite:** consent of instructor, departmental chairperson, and College of Business dean.

FN: Food and Nutrition **Department of Food and Nutrition** **College of Health and Human Services**

FN 510 Food, Nutrition, and Aging 3 s.h.
How food relates to health maintenance and special dietary problems during the middle and later years. Nonmajors only.

FN 544 Food Composition and Biochemistry 3 s.h.
Covers basic chemistry and biochemistry of essential components of food originating from plant and animal sources. **Prerequisite:** CH 355.

FN 547 Nutritional Aspects of Food Technology 3 s.h.
Studies current known effects of food processing techniques on the nutritional value and safety of food. **Prerequisites:** FN 212 and BI 241.

FN 558 Advanced Human Nutrition 3 s.h.
In-depth study of the nutrients and their functions within the cell. Incorporation of the principles of physiology and biochemistry in the study of nutrition. Emphasis on current research. **Prerequisites:** FN 212, CH 355, and BI 151.

FN 561 Microwave Cooking Technology 3 s.h.
Examines the electronic technology, selection, care, and use of the microwave oven. Basic physical and chemical concepts related to microwave cooking are included. Individual research problem required. Two lectures/two lab hours per week. **Prerequisite:** CH 101.

FN 562 Advanced Experimental Foods 3 s.h.
An experimental approach to the many factors influencing the chemical and physical properties of food. Use of scientific method in developing an individual project combining an evaluation of current literature and appropriate sensory and analytical methodology. **Prerequisites:** FN 362 and CH 231.

FN 564 Food and Nutrition Research Methods 3 s.h.
Introduction to research methodology in food and nutrition. Includes theory and techniques of physical, chemical, and instrumental analysis. Applications of these methods to food and animal models with statistical analysis of data. **Prerequisites:** FN 362, FN 458, CH 351, and MA 217.

FN 612 Administration of Food Service Systems 3 s.h.
Addresses food service as a system of interrelated parts and of controlling management resources. Analysis of different types of food service delivery systems and legal responsibilities of a food service administrator will be covered. **Prerequisites:** FN 358, FN 259, FN 313, FN 356, or three years' work experience in a food service management position.

FN 641 Eating Behaviors and Food Habits 3 s.h.
Investigation and analysis of historical, political, religious, ethnic, environmental, and social influences which affect food consumption patterns. **Prerequisites:** PC 101 and SO 151.

FN 642 Contemporary Issues in Food and Nutrition 3 s.h.
Current information in foods and nutrition is investigated, analyzed, and evaluated for practical implementation.

FN 645 Proteins, Carbohydrates, and Fats 3 s.h.
Nutritional considerations of protein, carbohydrate, and fat metabolism. Physiological and biochemical functions of these nutrients will be discussed.

FN 616 Vitamins and Minerals 3 s.h.
Biochemical role of vitamins and minerals in macronutrient metabolism. Focus on biochemical and physiologic functions, and current research implications.

FN 698 Internship 1-6 s.h.
Supervised work experience for food and nutrition majors. Permission: Department chairperson.

FN 711 Nutrition in the Life Cycle 3 s.h.
Studies bodily functions at different stages of development under differing environmental conditions and at various levels of biological organization.

FN 713 Seminar in Food and Nutrition 1 s.h.
Preparation and presentation of written scientific reports and/or current departmental research. Course to be taken twice.
Prerequisites: GR 615, GR 516, and two courses from the department requirement.

FN 743 Clinical Dietetics 3 s.h.
Examines nutritional management of the hospitalized patient with emphasis on the role of the dietitian. Research for a paper and oral critiques of current literature.

FN 799 Independent Study in Food and Nutrition 1-3 s.h.
Prerequisites: completion of two courses in the department requirement. Advanced study and/or selected research problems from the field of food and nutrition. May be taken for a maximum of three credits.

FN 850 Thesis 1-4 s.h.

GE: Geography **Department of Geography and Regional Planning** **College of Humanities and Social Sciences**

GE 511 History of Geography 3 s.h.
History of the disciplines, great ideas, leading professionals, and unresolved issues are studied.

GE 513 Cartography 3 s.h.
Develops ability to map and diagram human and environmental phenomena. Special maps, charts, and diagrams will be considered as required by students. Recommended for all master's candidates.

GE 514 Map and Photograph Interpretation 3 s.h.
Develops skill in extracting information and synthesizing data from maps and aerial photographs as applied to geologic, land use, planning, and terrain analysis problems.

GE 515 Remote Sensing 3 s.h.
Methods of remote sensing such as thermal sensing, multispectral scanning, satellite imagery, side-looking airborne radar imagery; and additive color analysis and their applications, particularly as applied to geographic and planning problems, are studied.

GE 516 Introduction to Geographic Information Systems 3 s.h.
Automated methods for creating, maintaining, and analyzing spatial data are presented. Topics include 1) specialized GIS hardware and software, 2) vector vs. raster vs. object oriented spatial data structures, 3) creation and manipulation of geographic data files, 4) database design and management concepts, 5) spatial analysis, and 6) cartographic design. **Prerequisite:** GE 513 or equivalent or permission of instructor.

GE 517 GIS Applications Development 3 s.h.
A project based class where students learn the skills to develop and maintain a Geographic Information System. Students will construct functional systems. Designing GIS systems to use specification, data collection, data input, project management, and system documentation are covered. **Prerequisite:** GE 516.

GE 531 Population Geography 3 s.h.
Spatial variations in numbers, characteristics and dynamics of human population, models, and theoretical constructs relevant to demographic structures and processes are studied.

GE 532 Urban Geography 3 s.h.
Analysis of city types, patterns, and functions as influenced by geographic conditions and other factors. City planning techniques and field study are utilized.

GE 533 Geography of Transportation and Trade 3 s.h.
Transportation systems and their use: accessibility, circulation, time and distance concepts, and trade patterns. Empirical and theoretical approaches are examined.

GE 534 Political Geography 3 s.h.
Geographic factors and conditions are analyzed as they relate to character and function of states. Political institutions in light of geographic conditions.

GE 540 Conservation: Environmental Analysis 3 s.h.
Problems of exploitation and utilization of regional resources, (e.g., soils, minerals, forests, and wildlife) in relation to population growth and regional planning and development.

GE 550 Introduction to Planning 3 s.h.
Introduction to the profession and activity of contemporary American urban and regional planning. Course emphasis is placed on land use control, design, growth management, and development regulation. The legal and institutional bases of planning practice are covered as well.

GE 552 Planning Methods 3 s.h.
Research, analytical design, and plan-making techniques in urban and regional planning. Examines basic items necessary to prepare urban and regional comprehensive plans. **Prerequisite:** GE 550.

GE 554 Planning Design 3 s.h.
Presents concepts of city, subdivision, and transportation design in relation to topography, natural resources, and other physical elements. **Prerequisite:** GE 550.

GE 558 Land Use Law 3 s.h.
Introduces students to principles of land use law. The course focus is on federal constitutional principles and key Supreme Court cases, especially as they relate to actions of local units of government and municipal planning practice. The course deals with the present state of land use law and with current trends and issues.
Prerequisite: GE 550. (Effective 1996-97; pending approval by Council of Trustees.)

GE 564 Land Use Policy 3 s.h.
Introduces students to and provides an overview of land use issues at the regional, state, and federal levels. Emphasis is placed upon the evolution of contemporary policy strategies, constitutional issues, and regional controversies involved in the regulation of metropolitan growth, central city decline, and management of public lands. **Prerequisite:** GE 550 or permission of the instructor.

GE 568 Planning Theory 3 s.h.
Examines process of city planning during ancient, medieval, Renaissance, and modern periods. A review of early planning in America, as well as present city planning, is included. **Prerequisite:** GE 550.

GE 571 Aerospace Workshop 3 s.h.
Develops an appreciation and provides information related to aerospace activities and contributions; offers background for teaching aerospace courses; discusses aviation/space careers; and presents the basic principles of flying (usually including some flight instruction). Offered summer only.

GE 610 Research in Geography and Regional Planning 3 s.h.
Elements and techniques of scientific research, as applied to geographic and planning problems, are studied. A research proposal is developed.

GE 612 Quantitative Techniques in Geography and Planning 3 s.h.
Descriptive and inferential statistical techniques applied to spatial distribution and spatial association of physical and cultural phenomena and testing of spatial theoretical constructs.

GE 614 Thought and Philosophy in Geography and Planning 3 s.h.
This course examines the status of current and past thought and philosophy in geography and regional planning using the literature in planning, geography, and the philosophy of science. Topics examined are regional development, local planning, environmentalism and physical geography, and cultural geography. **Prerequisites:** GE 610 and GE 612. (Effective 1996-97; pending approval by Council of Trustees.)

GE 617 Field Techniques in Geography and Planning 3 s.h.
Field tools and techniques are evaluated and used in the study of a specific area. Interpretation of spatial patterns of phenomena is emphasized.

GE 620 Spatial Structure of the Economy 3 s.h.
The spatial organization of economic systems is studied. Processes that give rise to these systems and their spatial interdependencies are explored. Topical and regional examples of spatial structure are used as case studies.

GE 622 Industrial Geography 3 s.h.
Spatial aspects of industry are considered. Emphasis is placed on empirical study of patterns of industry and on location theory.

GE 623 Regional Development 3 s.h.
Theory and policy implications of the spatial aspects of development in various regions of underdevelopment.

GE 630 Cultural Development 3 s.h.
Literature and methods of cultural geography. Topics include population, settlements, human ecology, culture areas, and related features.

GE 633 Settlement Geography 3 s.h.
Settlement patterns and processes: origins, diffusion, classification, pioneer, settlement planning, and agricultural colonization.

GE 650 Regional Geography 3 s.h.
Various regions of the world may be dealt with, such as Latin America, Africa, or South Asia, when there is sufficient student demand. Physical, environmental, cultural, and population patterns are considered.

GE 665 Plan Implementation 3 s.h.
Considers zoning, improvement programs, housing codes, building codes, methodology and application of administrative procedures, federal and local urban renewal programs, site selection, and program administration. **Prerequisite:** GE 560.

GE 581/681 Special Topics 3 s.h.
Topical courses offered on an experimental basis. Check department schedule for these offerings.

GE 670 Professional Problems in Geographic Education 3 s.h.
Classroom problems and discussion centered about new viewpoints in geography. Individual reports, group discussion, and research included.

GE 680 Seminar 3-6 s.h.
Seminars on various topics will be offered occasionally. Topics such as new trends in planning, cartographic theory, or spatial aspects of service industries are the focus of research projects.

GE 850 Thesis 3-6 s.h.
Registration for thesis must be approved by the department's graduate coordinator and chairperson ahead of time.

GR: Graduate General Service The Graduate School and Research

Note: The following Graduate School courses are taught by selected departmental faculty and are open to all qualified graduate students independent of degree or certification program. The student should check program applicability with his or her adviser, department chairperson, or graduate coordinator.

For other General Service Courses, see SS 599 Contemporary Europe, ED 595 International Study Tour in Education, and ED 540 Supervision of Student Teaching.

GR 516 Statistical Methods I 3 s.h.
Measurement and statistical techniques as used in administration and educational research. Basic descriptive statistics, including measures of central tendency, variability, and correlation are developed. Reliability and validity of test scores with emphasis on use of statistical techniques are studied and their interpretation.

GR 517 Statistical Methods II 3 s.h.
Using computer programs, a wide array of statistical procedures for research workers are explored. Basic concepts of statistical inference and prediction are reviewed, including regression analysis and prediction, hypothesis testing, analysis of variance and covariance, and partial and multiple correlation. Emphasis is placed on use of computers and interpretation of computer printouts along with understanding techniques employed. No computer knowledge is necessary. **Prerequisite:** GR 516 or equivalent.

GR 615 Elements of Research 3 s.h.
Selection of a research problem, data collection, types of research, research reports, and use of the library and computer in connection with research problems are studied. Elements of statistics are introduced. This course provides background for preparation of the thesis and enables the student to become an intelligent consumer of products of academic research. Required of all students working toward the M.Ed. degree.

GR 681 Special Topics 1-3 s.h.
Group study of course material not offered in other graduate courses. **Prerequisite:** This course may not be scheduled without prior written approval of the dean of the Graduate School.

GR 699 Independent Study 1-3 s.h.
Individualized in-depth study of an approved topic directed by a participating faculty member and approved administratively.
Prerequisite: This course may not be scheduled without prior written approval of the dean of the Graduate School.

GS: Geoscience

Department of Geoscience

College of Natural Sciences and Mathematics

GS 511 Sedimentary Petrology 3 s.h.
Determination and interpretation of grain-size parameters; an introduction to clays and clay mineralogy; hand lens and petrographic microscope study of marine phosphorites, carbonates, siliceous sediments, heavy minerals, and sandstones with emphasis on interpreting ancient depositional environments. **Prerequisite:** GS 321.

GS 512 Stratigraphy 3 s.h.
Study of layered rocks with emphasis on the guiding principles of stratigraphy, the evaluation of unconformities, the principles and problems of correlation, and selected stratigraphy problems. **Prerequisite:** GS 411.

GS 522 Igneous and Metamorphic Petrology 3 s.h.
Study of rock phyla and their chemical and spatial relationships in the earth. Special attention to the genesis, mineral composition, and classification of rock types. Ecology of igneous, sedimentary, and metamorphic rocks is studied in detail. **Prerequisite:** GS 321.

GS 526 Structural Field Geology 3 s.h.
Includes techniques of geologic field work, such as measuring sections, use of aerial photographs, and a field project involving compilation of a geologic map, cross sections, and geologic report. **Prerequisite:** GS 325.

GS 530 Paleontology 3 s.h.
A morphological study of major invertebrate life forms of geologic past and their distribution in space and time. **Prerequisite:** GS 131 or BI120.

GS 536 Geology of the Northern Rockies 3 s.h.
A field study of the major geologic features and relationships involved in the development of the northern Rocky Mountains, National Park and Monument areas of South Dakota, Wyoming, and Montana are included among the areas investigated. **Prerequisite:** permission of the instructor.

GS 540 Petroleum Geology 3 s.h.
An introduction to the geology of petroleum, its origin, migration, entrapment, and production. The laboratory is designed to provide practical experience in subsurface mapping techniques and the use and evaluation of geophysical logging devices. **Prerequisite:** minimum 20 credit hours of Geology.

GS 541 The Solar System 3 s.h.
Characteristics and behavior of planets and their satellites, asteroids, meteors, comets, and other phenomena of the solar system. One of the major topics will investigate and criticize several of the theories of origin. Will require some treatment of celestial mechanics.

GS 542 The Sidereal Universe 3 s.h.
Characteristics and classification of the stars, their assemblage groups and galaxies, and their evolution. Techniques of gathering data are examined to gain an understanding of the role of the telescope, spectroscopic, and photometer in astronomical research.

Lab exercises and night observations are part of the course. Credit will be given only to those for whom the course represents an area of study for which credit has not previously been recorded.
Prerequisites: MA 121 and PY 111.

GS 550 Operation of the Planetarium 1-2 s.h.
Designed to acquaint student with the operation and use of the Spitz Planetarium. A satisfactory instructional program or show for a public group will demonstrate accomplishment of course objectives. **Prerequisite:** GS 110 or GS 341 or GS 342.

GS 562 Marine Geology and Plate Tectonics 3 s.h.
A continuation of physical oceanography. Emphasis upon marine geology, coastal geomorphology, and structure and sedimentary environments of the continental shelf, slope, and ocean basin. **Prerequisites:** PY 111, PY 112, and Geology courses.

GS 681 Special Topics 1-3 s.h.
As student demand and circumstances may dictate, special graduate courses may be offered by any member of the geoscience graduate faculty.

HE: Home Economics Education

Department of Human Development and Environmental Studies

College of Health and Human Services

HIE 517 Infant Development 3 s.h.
Study of characteristic developmental changes of human infants from birth to approximately two and one-half years.

HIE 526 Techniques of Parent Education 3 s.h.
Focuses on scope and aims of parent education movement. Methods of helping families become more effective in their parent-child relationships are examined.

HIE 527 Administration of Child Development Centers 3 s.h.
Development of competencies needed to administer child care programs. Focuses on program philosophy, curriculum materials, parent and community involvement, staff selection and training, admissions and grouping, proposal writing, budgeting and finance, government regulations, reporting, and recordkeeping.

HIE 533 Tour in Home Economics 1-6 s.h.
Aspects of home economics are studied in relation to the culture of areas toured. Consult brochures, summer sessions schedules, or chairperson for special offerings.

HIE 555 Home Economics Programs for Individuals with Special Needs 3 s.h.
Application of vocational regulations and public laws in relation to individuals with special needs in home economics programs. Planning, methods, strategies, and resources for individuals with special needs in home economics programs in school and nonschool settings.

HIE 556 Independent Living for Individuals with Special Needs 3 s.h.
Home management and work simplification techniques for individuals with special needs. Includes adaptations and modifications for housing, clothing, foods, child care, and consumer problems of handicapped individuals.

HE 674 Advanced Methods of Teaching Home Economics 3 s.h.
Various models of classroom teaching are studied with emphasis on procedure, equipment, and materials used in the improvement of instruction. Implications of current trends and issues relevant to classroom education are discussed.

HE 675 Special Problems in Home Economics 3 s.h.
Specific problems with curriculum, teaching, learning experiences, and evaluation of a subject matter area are stressed. Each student will research a special problem or area of interest.

HE 677 Seminar in Home Economics 1-3 s.h.
Seminars in selected topics.

HE 697 Workshop in Home Economics 1-6 s.h.
Provides opportunities for experienced educational personnel to concentrate their study on common professional problems.

HE 698 Internship 1-6 s.h.
Supervised work experience for majors.

HE 699 Independent Study in Home Economics 1-6 s.h.
Student will pursue an independent study in area of home economics not previously studied and for which the student and adviser identify a need.

HI: History

Department of History

College of Humanities and Social Sciences

HI 501 History of Ancient Greece 3 s.h.
Will analyze major political, social, economic, and cultural developments in ancient Greek civilization from the Bronze Age to the death of Alexander.

HI 502 History of Ancient Rome 3 s.h.
Will trace Roman history from early Republic to fall of Empire. A study of a civilization from its inception to its collapse.

HI 503 Medieval Europe I, 400-1000 3 s.h.
History of early Medieval Europe, from decline of Rome to beginnings of High Middle Ages; emphasis on political, social, economic, religious, and intellectual developments.

HI 504 Medieval Europe II, 1000-1350 3 s.h.
History of late Medieval Europe, from High Middle Ages to Renaissance period; emphasis on political, social, economic, religious, and intellectual developments.

HI 505 Renaissance and Reformation 3 s.h.
History of Europe from ca. 1250; rise of commercial city, kings, and pressures on the Christian Church to 1600. Some consideration of technology and voyages.

HI 506 Early Modern Europe 3 s.h.
Greatness of France under Louis XIV; Sweden; Thirty Years' War; emergence of modern society; French Revolution.

HI 507 History of Europe, 1815-1914 3 s.h.
Study of Europe in nineteenth century, with emphasis on the emergence of major thought patterns, Romanticism, Socialism, and Positivism.

HI 508 Twentieth-Century Europe 3 s.h.
Political, economic, and diplomatic trends of Europe since 1900, with major emphasis on causes and results of war and search for security.

HI 511 Rise and Fall of Hitler's Empire 3 s.h.
In-depth study of Hitler and the Nazi Order: offers an analysis of nineteenth-century origins of Nazi ideology and intensively analyzes domestic and foreign policy (1920-1945), including Holocaust, Resistance, and the postwar Nuremberg Trials.

HI 520 History of England to 1688 3 s.h.
Survey of growth of English nation, with emphasis on political, social, and economic developments leading to seventeenth-century conflict between Crown and Parliament.

HI 521 History of England, 1688-Present 3 s.h.
Survey of growth of England as a democratic constitutional monarchy. Attention directed to colonial America and English-U.S. relations, as well as to imperial expansion and England's role in the twentieth-century world. Cultural history is included.

HI 522 French Revolution and Napoleon 3 s.h.
Development of the Grand Monarchy; brief sketch of Old Regime, concentration on the Revolution and Empire, with emphasis on politics, diplomacy, and economics. Readings and brief papers.

HI 524 History of Germany to 1848 3 s.h.
Study of evolution of German nation from its prehistoric origins, emphasizing medieval and early modern phases to 1848.

HI 525 History of Germany, 1849-Present 3 s.h.
Study of development of modern Germany from the Revolution of 1848, including imperial, republican, and totalitarian phases, to postwar formation of East and West Germany.

HI 526 History of Russia 3 s.h.
General survey of Russian history, culture, and institutions. Special consideration given to study of historical forces formative of revolution in 1917.

HI 527 History of Soviet Russia 3 s.h.
General survey of contemporary Soviet history, culture, and institutions. Special emphasis given to study of communist theory and its place in current Russian historiography.

HI 530 History of Islamic Civilization 3 s.h.
An approach to learning about non-Western culture; Mohammed, Arabs, Muslims as creators to a great civilization from the rise of Islam to 1800; emphasis on cultural institutions and their interrelationships within the Middle East.

HI 531 Modern Middle East 3 s.h.
Survey of changes that have taken place in the Middle East and in Islam since eighteenth century and of contemporary problems in that region.

HI 540 Colonial America 3 s.h.
Survey of original thirteen states from their inception within the British Empire to 1763, the eve of independence. Attention given to their political development, economic position within the empire, relations with Indians, and evolution of their social, educational, and religious lives.

HI 541 The American Revolution 3 s.h.
Study of United States history from beginnings of revolutionary crisis in 1763 through adoption of the Constitution and the administration of John Adams. Special emphasis is given to the causes and civil war aspects of the revolution and the constitutional-political development of the new nation.

HI 542 The Early Republic 3 s.h.
Survey of United States history from 1783 to 1850, with special attention to constitutional, political, and social trends.

III 543 Civil War and Reconstruction 3 s.h.

Study of failure of American democracy to cope with issues of mid-nineteenth century, followed by political, economic, military, and social developments during war and reconciliation of North and South.

III 546 Recent United States History 3 s.h.

Study of political, economic, and cultural changes in American life since 1929; examines roots of social problems facing us today. Some recent foreign policy trends also studied.

III 560 History of Pennsylvania 3 s.h.

Emphasizes the cultural, economic, political, and social development of our state in various periods from colonial to today. Special attention given to diversity of Pennsylvania's people and their institutions and problems.

III 561 History of American Diplomacy, 1775-1900 3 s.h.

Traces foreign relations of United States from independence to emergence as a world power. Topics concentrate on themes of commercial relations, political isolation, expansion, and debate over imperialism.

III 562 History of American Diplomacy, 1900-Present 3 s.h.

Treats primarily our twentieth-century involvement in world affairs and domestic debate over that involvement. Special emphasis will be placed on the role of interest groups and increasing power of Executive Department over foreign affairs.

III 563 Thought and Culture in Early America 3 s.h.

Selected topics in early American intellectual and cultural growth, with emphasis on Puritanism, Enlightenment, Cultural Nationalism, and Romantic Movement.

III 564 Thought and Culture in Modern America 3 s.h.

Selected treatment of historical development of modern American movements in social and political thought, religion, philosophy, fine arts, and literature.

III 565 History of Black America Since Emancipation 3 s.h.

Description and analysis of role of blacks in history of the United States since the Civil War; emphasis on key leaders, major organizations, leading movements, and crucial ideologies of blacks in modern America.

III 567 Native American History 3 s.h.

An unfamiliar perspective on a familiar tale. This course presents the "new Indian History"—North America from Native American materials and points of view. Identification, analysis, and synthesis of Indian realities and options over time are at the heart of this course.

III 569 Women in America 3 s.h.

Surveys of religious, legal, political, social, and popular culture perspectives of womanhood in America from colonial times to present.

III 572 History of the Early American Working Class 3 s.h.

Description and analysis of nature and significance of the U.S. working class in eighteenth and nineteenth centuries. Work settings and communities of workers will be examined, as well as unions such as the National Labor Union and Knights of Labor.

III 573 History of the Modern American Working Class 3 s.h.

Description and analysis of the nature and significance of the U.S. working class in the twentieth century. Work settings and strikes will be examined and analyzed, as well as unions such as the United Mine Workers and United Auto Workers and leaders including Samuel Gompers, John L. Lewis, and George Meany.

III 576 Economic History of United States 3 s.h.

Historical development of economic institutions in American life since independence; emphasis on farming, labor, transportation, banking, and manufacturing.

III 581 Special Topics in History 3 s.h.

Each semester, courses are offered in interest areas which are not part of the regular course offerings.

III 591 Film as History 3 s.h.

This course deals with the cinema as social, cultural, and intellectual history from its origins to the present day.

III 600 Readings in History 3-6 s.h.

Directed readings of historical materials, focused on a general topic.

III 601 History Seminar 3-6 s.h.

Area research, culminating in a formal paper.

III 605 Introduction to Public History 3 s.h.

Introduction to the wide range of activities in which public historians engage. Exploration of theoretical and practical issues associated with historic preservation, historical editing, oral history, the management of archival and manuscript collections, and a variety of other public history activities. Broader conceptual issues associated with the concept of public history also are considered.

III 606 Topics in Public History 3 s.h.

Focuses on one specific field of public history activity (field varies from semester to semester). Extensive reading in the literature of that field and completion of an appropriate project or paper.

Prerequisite: III 605.

III 614 Research Methods 3 s.h.

Investigation of library systems, reference works, bibliographies, how to compile a bibliography, organizing research, use of statistics, style systems in printing.

III 698 History Internship 1-6 s.h.

With departmental approval, students are attached to local or national government or private agencies doing directive, bibliography, archival, or museum work. Advising professor meets with intern regularly and determines what papers or reports will be required.

III 699 Independent Study 3 s.h.

Student selects topic for individual study with an instructor.

III 850 Thesis 6 s.h.

HP: Health and Physical Education

Department of Health and Physical Education

College of Health and Human Services

HP 510 Exercise Prescription 3 s.h.

The course is designed to teach individuals to write exercise prescriptions based upon a subject's tolerance for physical activity. Special emphasis will be given to risk factors, techniques of evaluation, drugs, injuries, environmental factors, and motivation with respect to the role each plays in physical activity assessment. In-depth experiences working with qualified medical personnel will be provided. **Prerequisite:** HP 343.

HP 512 Physical Activity and Stress Management 3 s.h.

Acquisition of necessary understandings of anxiety and stress with respect to the nature, the place they hold in our society, and the intervention strategies related to physical activity. A paper relating the utilization of these techniques is required.

HP 513 Physical Activity and Aging 3 s.h.
The goals of the course are to present the major aspects of physical activity, its importance to the older adult, and the organization of an activity program. Specific attention will be given to the physiology of activity, effects of activity on growth and aging, exercise prescription, flexibility, overweight and obesity, and motivational strategies. A paper is required that deals with analysis of problems of the aged as observed from visitations to nursing homes, senior citizens' organizations, and social service agencies.

HP 550 Curriculum and Programming in Sexuality Education 3 s.h.
Designed to provide and share information that will be helpful to current and future school personnel in developing sexuality education programs in their schools and local communities.

HP 600 History of Philosophy of Sport 3 s.h.
A functional approach to an understanding of sport and human movement during the course of civilization with emphasis on formation of a constructive philosophical approach to present-day problems.

HP 601 Sport and Society 3 s.h.
Designed to acquaint the student with the reciprocal relationships between sport and physical activity as it affects human development in the societies and cultures out of which sport emerges.

HP 602 Sport Psychology 3 s.h.
Study of the psychological effects and implications of participation in sport and physical activity. Emphasis on personality and motivational dynamics as they relate to sport involvement in human behavior.

HP 603 Physiological Basis of Sport 3 s.h.
An examination of the physiological factors that influence performance in sport with emphasis on the analysis of various training techniques.

HP 631 Motor Learning 3 s.h.
Psychological principles of learning are applied to the learning of motor skills. Focuses on integration of the learning process, the individuality of the learner, and task and instructional procedures.

HP 632 Assessment of Human Physiological Functions 3 s.h.
Study of various physical fitness components and their contribution to a person's well-being and how to measure and evaluate physical fitness.

HP 633 Kinesiological Principles 3 s.h.
Scientific study of human motion with particular attention to analysis of sport techniques and discussion of kinesiological concepts.

HP 634 Current Literature in Sport 3 s.h.
Review of current literature in physical education and sport. Requires the submission of an article for publication.

HP 635 Sport Management 3 s.h.
Theory and practice of human management with applications to sport; formal structure of organizations, goal setting, organizational personality, group processes, and leadership styles.

HP 637 Sport Facilities Management 3 s.h.
An administrative and management course designed to prepare sport managers to develop and operate competitive, recreational, instructional, therapeutic, and multifaceted sport complexes. Course work includes planning, design, construction, budgeting, programming, staffing, equipping, administration, maintenance, safety, and rehabilitation. Three lecture hours.

HP 641 Administration of Aquatic Facilities 3 s.h.
Examines the organizational procedures, administrative techniques, and practices employed in aquatics with special emphasis on adapted, competitive, instructional, recreational, social, and water safety programs.

HP 642 Design and Operation of Aquatic Facilities 3 s.h.
Elements and principles of planning, design, and operation of swimming pools, waterfront facilities, and related equipment necessary for the aquatic administrator.

HP 650 Wellness: A Classroom Approach 3 s.h.
Designed to provide classroom teachers and educational specialists with knowledge, skills, and management capabilities to plan, implement, and evaluate personal, classroom, and school health promotion and wellness programs. The intent of this course is to educate teachers to promote health and wellness needs of children and youth.

HP 680 Seminar 3 s.h.
Specific subjects will be considered through readings, reports, discussions, and guest presenters. A paper will be required. A specific title will be listed in the schedule of classes. May be repeated.

HP 681 Special Topics 3 s.h.

HP 698 Internship 3-6 s.h.
Prospectus must be presented by student. Objective is to provide an in-depth experience in an area of interest to the student under the guidance of a faculty member and a cooperating supervisor. **Prerequisite:** Faculty approval.

HP 699 Independent Study 1-3 s.h.
Students may study intensively a subject of their interest under the guidance of a faculty member with the appropriate expertise. Prospectus must be presented by the student. **Prerequisite:** Approval of faculty member, department chairperson, college dean, and associate provost.

HP 850 Thesis 3-6 s.h.

IM: Information Management **Department of Management Information Systems** **and Decision Sciences** **Eberly College of Business**

IM 640 Management Information Systems 3 s.h.
This course introduces MIS concepts and theories to the graduate student. It deals with information processing and communication as they relate to the development and design of effective business applications. Computer system hardware, software, and database management concepts are discussed in terms of the integration of specific business subsystems into a comprehensible organizational management information system. Managerial involvement in the planning, utilization, and control of information systems is emphasized. **Prerequisite:** IM 300.

IM 642 Business Data Processing II 3 s.h.
Develops the principles of COBOL language programming with specific applications for the teachers of business and distributive education. The course builds upon the basic concepts of data processing developed in IM 641. Special emphasis placed on computer-based instruction and programmed instruction as used with the remote terminals. The value of library programs will be demonstrated. **Prerequisite:** IM 641 or equivalent. Not open for students with credit for IM 470/570.

IM 681 Special Topics in Management Information Systems 3 s.h.
Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students with instructor choosing specific topics. May be repeated by specific approval. **Prerequisite:** permission of the instructor and the College of Business graduate coordinator.

IM 699 Independent Study in Management Information Systems 1-3 s.h.
Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. **Prerequisite:** consent of instructor, departmental chairperson, and College of Business dean.

LP: Administration and Leadership Studies

Department of Professional Studies in Education

College of Education

LP 601 Leadership Theories 3 s.h.
Focuses on several leadership theories related to administering social agencies, schools, business, and industry.

LP 702 Leadership: A Case Study Approach 3 s.h.
Acquaints students with the theory and application of the case study approach as related to theories of leadership. Designed to provide practice for future administrators in the following areas: group decision making, leadership, planning and organizing, sensitivity, judgment, and communication skills. **Prerequisites:** For approved Administration and Leadership Studies candidates; in addition, LP 601 for permission of the instructor.

LP 703 Leadership: Applied Practice 3 s.h.
Students must develop and implement a field project that incorporates leadership and policy theories learned in previous courses. **Prerequisites:** For approved Administration and Leadership Studies candidates; in addition, LP 601 and LP 702 or permission of the instructor.

LP 798 Internship in Administration and Leadership Studies 3-6 s.h.
A planned, field-based work experience proposed by the advanced graduate student to enhance professional competence, subject to approval by student's adviser and program director. **Prerequisite:** For approved Administration and Leadership Studies candidates or permission of the instructor.

LP 950 Dissertation 9 s.h.

LP 951 Extended Dissertation 1 s.h.

LR: Industrial and Labor Relations

Department of Industrial and Labor Relations

College of Humanities and Social Sciences

LR 526 Case Studies in Labor-Management Relations 3 s.h.
Study of labor-management relationships in a variety of organizational settings through utilization of the case study technique.

LR 610 Employee Rights Under Law 3 s.h.
A review of the legislated rights and benefits of employees in terms of their impact on labor and management in the collective bargaining process.

LR 611 Development and Theories of the Labor Movement 3 s.h.
Institutional and theoretical overview of the development of the American labor movement with special emphasis on major labor movement theorists. (Alternative: HL 566)

LR 613 Fundamentals of American Industrial and Labor Relations 3 s.h.
Introduction to terms, theories, and practice of industrial and labor relations in the United States.

LR 615 Dispute Settlement 3 s.h.
Review of the theories underlying and legislation supporting labor arbitration, emphasizing development of advocacy skills through simulations of actual disputes. **Prerequisite:** LR 613.

LR 618 Seminar: Current Issues in Industrial and Labor Relations 3 s.h.
Detailed examination of current professional issues in the field.

LR 619 Research Methods in Industrial and Labor Relations 3 s.h.
Nature of and major outlets for contemporary research in labor relations, as well as the historical development of research in the field. Elements of statistics and quantitative interpretations are introduced.

LR 620 Internship 3 s.h.
Field experience in industrial and labor relations. An internship log and term paper are required.

LR 621 Labor Relations in the Public Sector 3 s.h.
Developments in federal, state, and local labor relations, including Presidential orders and federal agencies; survey of the states; Pennsylvania Acts 111 and 195; effects of public sector fact-finding and arbitration.

LR 622 Discrimination in Employment 3 s.h.
Investigation of employment discrimination in the United States with special attention to the roles of government, industry, and labor and the impact of federal intervention since 1960.

LR 623 Structure and Government of Unions 3 s.h.
The union examined as an institution, with focus on its organizational structure; administration; relationships with the employer, its members, and its state and national affiliates. Particular unions will be chosen for case study.

LR 624 Comparative Labor Relations 3 s.h.
International dimensions of labor relations are explored by examining the labor-management relations in a foreign country or region. **Prerequisite:** LR 613.

LR 625 Processes of Collective Bargaining 3 s.h.
Survey of current laws, principles, and procedures in use in modern collective bargaining and evolving trends.

LR 631 Human Resources Management 3 s.h.
Human resource management systems with a special examination of public sector organizations.

LR 632 Compensation Administration 3 s.h.
Study of the field of compensation management and benefits administration in the public and private sectors. Special emphasis on the input of collective bargaining in the development and administration of compensation and benefit systems and the necessary skills to function as a professional in the field.

LR 640 Negotiations 3 s.h.
A course on negotiations theory and practice which applies negotiations strategies from a variety of fields in hands-on simulations of collective bargaining in labor relations. **Prerequisite:** LR 613.

LR 641 Contract Administration 3 s.h.
Analysis of the practices and responsibilities of labor and management in the mutual performance of a collective bargaining agreement with primary attention given to the process of grievance resolution. **Prerequisite:** LR 613.

LR 642 Concerted Activity 3 s.h.
Examines the various strategies and tactics that are available to the parties in confrontational situations. Emphasizes the statutory limitations set forth in the Labor Management Relations Act relating to topics such as picketing, consumer appeals, and boycotts.

LR 650 Alternative Work Styles 3 s.h.
Review of efforts to increase worker participation in certain levels of managerial decision making in private and public production or service enterprise, through shares in ownership, seats on boards, quality circles, and other participative structures. Results will be considered from the point of view of productivity, worker satisfaction, and social utility. **Prerequisite:** LR 613.

LR 651 Conflict Resolution 3 s.h.
An applied course focusing on the resolution of conflict between groups by a third party. Specifically examined are the techniques of negotiation, mediation, and conciliation. Simulation and role play are utilized as well as readings in theory and case study.

LR 681 Special Topics in Industrial and Labor Relations 3 s.h.
According to student demand, special graduate courses on selected topics.

LR 699 Independent Study 3 s.h.
Students will select one or more topics of critical importance in industrial and labor relations and will meet with faculty for independent reading, analysis, and evaluation. **Prerequisites:** Approval of department chairperson, college dean, and provost.

LR 850 Thesis 3-6 s.h.
For students writing the thesis. LR 850 should be scheduled for the semester in which they plan to complete their work. The thesis may be a noncommittee thesis (1 to 3 semester hours), with one faculty member serving as the student's adviser, or a committee thesis (1 to 6 semester hours).

MA: Mathematics
Department of Mathematics
College of Natural Sciences and Mathematics

MA 518 Sampling Survey Theory and Its Applications 3 s.h.
Directed to the student who is or will be doing quantitative research, commissioning large-scale surveys, and evaluating the results. Sampling techniques and statistical principles underlying their use will be introduced. Consideration will be given to the practical problems associated with implementation. **Prerequisite:** (for non-Math majors) MA 214, MA 216, MA 217, or GR 516.

MA 521-522 Advanced Calculus I, II 3,3 s.h.
A rigorous investigation of continuity, differentiation, and integration on real *n*-dimensional space. The Riemann-Stieltjes integral, infinite series, and infinite series of functions are also studied. **Prerequisite:** Permission of the adviser.

MA 523 Complex Variables I 3 s.h.
Introduces fundamental concepts of complex analysis and includes the following topics: complex numbers, functions, sequences, analytic functions, elementary functions, complex integration, power series, Laurent series, singular points, calculus of residues, infinite product and partial fraction expansion, conformal mapping, and analytic continuation. **Prerequisite:** Permission of the adviser.

MA 525 Applied Mathematical Analysis I 3 s.h.
This course provides the necessary background for an understanding of mathematical programming, proofs of convergence of algorithms, convexity, and factorable functions. It also develops necessary concepts in matrix theory which are required to develop efficient algorithms to solve linear and nonlinear programming models. **Prerequisite:** Calculus sequence, introductory linear algebra, or permission of the instructor.

MA 527 Topology 3 s.h.
Basic topological concepts, including some topological invariant relationships between topology and other disciplines of mathematics, are discussed. **Prerequisites:** Differential and Integral Calculus.

MA 545 Programming Models in Operations Research 3 s.h.
Development of deterministic mathematical models for managerial and social sciences with relevant computational techniques. Three hours' lecture per week. **Prerequisites:** two semesters of calculus.

MA 546 Probabilistic Models in Operations Research 3 s.h.
Development of probabilistic mathematical models for managerial and social sciences with relevant computational techniques. Three hours' lecture per week. **Prerequisites:** Two semesters of calculus, MA 563 or equivalent.

MA 547 Simulation Models 3 s.h.
This course considers the types of models that are basic to any simulation and methods for building and using such models. It includes discrete and continuous system simulations, their applications, and an introduction to SLAM II (Simulation Language for Alternative Modeling). **Prerequisites:** Completion of the calculus sequence, background in statistics and probability, and familiarity with concepts of programming (knowledge of a particular programming language not required).

MA 551 Numerical Methods for Supercomputers 3 s.h.
Supercomputers make use of special computer architectures—vector and parallel processors—in order to achieve the fastest processing speed currently available. Students will be introduced to these features and will learn how numerical algorithms can be constructed to exploit supercomputers' capabilities. Students will gain practical experience in programming for the Cray YMP, in incorporating existing scientific software packages into user-written programs, in submitting remote jobs to the Pittsburgh Supercomputer Center, and in producing animated graphical output to summarize the typically large volume of output data generated by large scientific programs. **Prerequisite:** Permission of the instructor.

MA 553 Theory of Numbers 3 s.h.
Elementary properties of divisibility, congruences, Chinese remainder theories, primitive roots and indices, quadratic reciprocity, diophantine equations, and number theoretic functions. **Prerequisites:** Differential and Integral Calculus.

MA 563 Mathematical Statistics I 3 s.h.
Probability theory necessary for an understanding of mathematical statistics is developed; applications of the theory are given, with emphasis on binomial, Poisson, and normal distributions. Sampling distributions and the central limit theorem are developed. **Prerequisites:** Differential and Integral Calculus.

MA 564 Mathematical Statistics II 3 s.h.

Multivariate distributions, properties of the moment generating function, change of variable technique, Chi-square distribution, estimation, confidence intervals, testing hypotheses, contingency tables, goodness of fit. Many practical applications. Use of calculating machines and computers where appropriate. **Prerequisite:** MA 563.

MA 565 Topics in Statistics 3 s.h.

Correlation and regression from applied and theoretical points of view, bivariate normal distribution, small sample theory. Student's *t* and *F* distributions, analysis of variance, nonparametric methods. Many practical applications. Calculating machines and computers used as appropriate. **Prerequisite:** MA 564.

MA 571 Linear Algebra 3 s.h.

Theory of vector spaces and linear transformations, applications to linear equations, determinants, and characteristic roots are studied.

MA 576-577 Abstract Algebra I, II 3,3 s.h.

Basic algebraic structures such as groups, rings, integral domains, and fields. Designed to develop ability to construct formal proofs and work within an abstract axiomatic system. Polynomial rings, factorization, and field extension leading up to Galois theory.

MA 581 Topics Seminars in Mathematics 3 s.h.

Special topics going beyond the scope of regularly offered courses. Offered per student interest/available staff. Students may take more than one topic seminar with approval of adviser. **Prerequisite:** Consent of instructor.

MA 631 Foundations of Mathematics I 3 s.h.

Designed to acquaint students with logical techniques used in proof and set theory. Topics include symbolic logic, rules of inference, validity of arguments, algebra of sets, cardinal numbers, the well-ordering property, and the Axiom of Choice.

MA 641 Differential Equations 3 s.h.

Special solvable nonlinear equations with solutions based on operator techniques, Laplace transform, or infinite series. Applications to physical problems. Three hours' lecture per week. **Prerequisite:** Differential and Integral Calculus.

MA 643 Graphs, Networks, and Combinatorics 3 s.h.

This course presents a study of arrangements and counting through the use of classical and analytical techniques. Properties of arrangement and measure of graphs are also examined. Emphasis is on computation and application. **Prerequisite:** Calculus sequence.

MA 645 Nonlinear Programming Models 3 s.h.

This course examines algorithms for solving nonlinear programming (optimization) models. It is also concerned with the theory of nonlinear optimization and with the characteristics of optimal points. Optimization models of real-world problems which can be solved by nonlinear programming methodology are also presented. **Prerequisites:** MA 525 and MA 545 or equivalent courses.

MA 650 History of Mathematics 3 s.h.

People and ideas that have shaped the course of events in mathematics. Major attention given to developing activities for secondary school mathematics classroom which incorporate the historical viewpoint.

MA 651 Seminar in Teaching Junior High School Mathematics 3 s.h.

Explores problems of teaching mathematics at junior high level. Emphasis on a discovery, lab-oriented approach to teaching. **Prerequisite:** Permission of instructor.

MA 652 Seminar in Teaching Senior High School Mathematics 3 s.h.

National and international forces shaping today's mathematics programs, curriculum development and research, art of generating interest, formation of concepts, proof, problem solving, generalization, and evaluation. Special attention to teaching topics from algebra and calculus and modern approaches to teaching geometry and trigonometry. **Prerequisite:** Permission of instructor.

MA 654 Curriculum and Supervision in Mathematics 3 s.h.

Basic principles underlying effective mathematics curriculum from both a theoretical and experimental viewpoint. Investigates supervisor's role as source of stimulation, leadership, and expertise in teaching mathematics.

MA 655 Projective Geometry 3 s.h.

Introduces Klein's formulation of geometry of the invariant theory of a given set under a given group of transformations and develops projective spaces of one and two dimensions and conics and quadratic forms. **Prerequisites:** Undergraduate courses in linear algebra and geometry.

MA 661 Advanced Sampling Theory 3 s.h.

Sampling techniques and the statistical principles underlying their use are introduced along with some of the more difficult nonsampling problems that arise in the design and implementation of large-scale sample surveys. Topics include simple random sampling, stratified random sampling, systematic sampling, cluster sampling, ratio estimation, use of supplementary information, sampling from wildlife populations, and sample size determination. Computer software will be used to facilitate arithmetic calculations. **Prerequisite:** MA 564 or consent of the instructor.

MA 663 Nonparametric Statistics 3 s.h.

Examines statistical procedures valid under unrestricted assumptions, scales of measurement, efficiency comparisons, signed rank procedures, two-sample rank tests, zero ties, order statistics, *k*-sample procedures, nonparametric measure of correlation. **Prerequisite:** MA 564 or consent of the instructor.

MA 665 Applied Regression Analysis 3 s.h.

Regression analysis and its interfaces with multivariate methods are presented in this course. The student is introduced to least squares, a matrix approach to linear regression, an examination of residuals, dummy variables, the polynomial model, best regression equations, multiple regression and mathematical model building, and multiple regression applied to analysis of variance and covariance. Computer programs for multivariate analysis will be used. **Prerequisites:** Introductory Linear Algebra and MA 564 or consent of the instructor.

MA 681-683 Special Topics in Mathematics 3 s.h.

Special topics in graduate mathematics beyond the scope of regularly offered graduate classes. Offered as student interest and available staff permit. With approval of the adviser more than one special topics class may be taken. **Prerequisite:** Consent of the instructor.

MA 684 Topics in Operations Research 3 s.h.

Special topics in operations research beyond the scope of regularly offered graduate courses. Offered as student interest and available staff permit. **Prerequisite:** Consent of the instructor.

MA 685 Topics in Statistical Methods 3 s.h.
This variable content course is designed for the student who has knowledge of basic statistical principles including analysis of variance and covariance, regression, and nonparametric statistics. Advanced, innovative, or exploratory topics in applied statistics will be introduced. Content will vary according to the interests of the instructor and students. **Prerequisites:** MA 661, MA 663, and MA 665.

MA 688 Problems in Applied Mathematics 3 s.h.
The purpose of this course is to involve the students in the solution of the mathematical problems which arise in real-world applications or to present topics which apply mathematics to real-world situations. **Prerequisites:** MA 525, MA 564, MA 545, MA 546, and permission of the instructor.

MA 698 Internship 1-6 s.h.
Positions with participating companies or agencies provide students with experience in mathematics-related work under the supervision of agencies and faculty.

MA 699 Independent Study in Mathematics 3 s.h.
Under the guidance of faculty member, a student may study some area of mathematics not included in the regular courses.

MA 850 Thesis 3 s.h.

MG: Management **Department of Management** **Eberly College of Business**

MG 613 Organizational Analysis 3 s.h.
An integrative course oriented toward an empirical analysis of the phenomena and theories of large, complex, formal organizations. Intergroup phenomena are also treated as they pertain to the larger organization. Special study is made of the organization as an economic, decision-making, bureaucratic, and political system. The analysis and design of organizations is viewed from a number of perspectives, including classical theory and case analysis, to illustrate and extend the major topics of the course. **Prerequisite:** MG 310.

MG 623 Seminar in Personnel 3 s.h.
Designed to offer the M.B.A. student the opportunity to research, study, and discuss various theories, principles, concepts, and issues of current interest to business and personnel managers. The case method will be emphasized, and the focus or theme of the seminar may be different each time it is offered. **Prerequisite:** MG 613.

MG 630 Management Theory 3 s.h.
Study of development, nature, and meaning of basic functions of management. Emphasis will be placed upon functional activities of an organization at all levels of management and the application of these principles. **Prerequisite:** MG 613.

MG 642 Organizational Behavior 3 s.h.
Study of human motivations and their constructive application to all aspects of business. Psychological basis of human relations will be developed as it applies in the business world. Major topics include employer-employee relations, labor relations, stockholder relations, customer relations, community relations, and public relations. **Prerequisite:** MG 613.

MG 651 International Management 3 s.h.
Study of theories and problems of management in multinational corporations (MNCs). Examines the macro- and structural-level issues of MNCs. Focuses on planning, organization structure,

managerial decision making, human resource management in global structures, and differences between MNCs and domestic organizations.

MG 652 Comparative Management 3 s.h.
Study of management theory and practice in different cultures. This course analyzes international similarities and dissimilarities in management functions, processes, structures, and factors. It also relates these topics to sociocultural, economic, political, and physical dimensions of the environment. A variety of comparative management systems, models, and theories are addressed, and research findings are examined. **Prerequisite:** MG 613.

MG 654 Managing Global Competition 3 s.h.
Changes in technology and world trade contribute to unstable managing environments. This course focuses on strategies to enhance the firm's ability to compete on a global basis. Fundamental business issues such as managing for the future, innovation, strategic alliances, success factors in the international environment, and long-range concerns of top management will be discussed. **Prerequisite:** MG 613.

MG 681 Special Topics in Management 3 s.h.
Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary depending upon the interests of instructor and students, with instructor choosing specific topics. May be repeated by specific approval. **Prerequisite:** Permission of the instructor and of the College of Business graduate coordinator.

MG 695 Business Policy 3 s.h.
Provides the graduate student an opportunity to utilize, integrate, and apply the theories, concepts, principles, and tools acquired during his/her business education (accounting, finance, marketing, management, management information systems, statistics, etc.) to real-world business problems and situations. Utilizes lectures, case studies, library research, field research, simulations, role playing, group decision making, and other strategic planning exercises. **Prerequisite:** 15 hours of graduate business courses.

MG 699 Independent Study in Management 1-3 s.h.
With the approval of the department, students will select one or more topics of critical importance in the field and will meet with faculty for independent reading, analysis, and evaluation. **Prerequisite:** Approval of department chairperson and College of Business graduate coordinator.

MH: Music History **Department of Music** **College of Fine Arts**

MH 503 Music of the Baroque Era 3 s.h.
A survey of music from about 1600 to 1750.

MH 504 Music of the Classical Era 3 s.h.
A survey of music from about 1725 to about 1827.

MH 505 Music of the Romantic Era 3 s.h.
A survey of music from about 1800 to 1910.

MH 507 Music of the Twentieth Century 3 s.h.
A survey of the principal stylistic trends in music from 1900 to the present.

MH 508 Music of the Sixteenth Century 3 s.h.
A survey of music from about 1500 to 1600.

MI: Marine Science **Department of Biology** **College of Natural Sciences and Mathematics**

MI 500 Problems in Marine Science 3 s.h.
 Independent study for the advanced student in marine sciences. Topics are selected from areas offered by the Marine Consortium, and studies are directed by the instructor in that area. **Prerequisite:** Consent of instructor.

MK: Marketing **Department of Marketing** **Eberly College of Business**

MK 521 Marketing Research 3 s.h.
 Research procedures and techniques applicable to problem solving in the marketing field. Critical analysis of research techniques with considerable emphasis placed on the use of information gathered. **Prerequisite:** MK 320.

MK 530 International Marketing 3 s.h.
 International marketing is analyzed with consideration given to the significance of government regulation, organization structures of export and import enterprises, and credit policies. **Prerequisite:** MK 320.

MK 603 Marketing Management 3 s.h.
 An analytical and quantitative approach to decision making and the planning, development, implementation, and control of a marketing program. **Prerequisite:** MK 320.

MK 611 Marketing Communications 3 s.h.
 Basic principles of marketing communications, such as sales promotion and advertising, together with a consideration of the major problems encountered in the management of those activities. Emphasizes the determination of basic promotional strategy, selection of advertising media, determination of advertising appropriations, and advertising research. **Prerequisite:** MK 603.

MK 621 Marketing Research 3 s.h.
 Methodologies and strategies for the conduct of marketing research, including the applicability of decision theory; analysis of univariate, bivariate, and multivariate data; survey research; observation; experimentation; panels and other forms of primary and secondary data collection; multivariate techniques of multidimensional scaling; and factor, cluster, and discriminant analysis. **Prerequisite:** MK 603.

MK 681 Special Topics in Marketing 3 s.h.
 Covers advanced or exploratory topics within the discipline. Specific content developed by instructor. Content will vary, depending upon the interests of instructor and students, with the instructor choosing specific topics. May be repeated by specific approval. **Prerequisite:** Permission of the instructor and of the College of Business graduate coordinator.

MK 699 Independent Study in Marketing 1-3 s.h.
 With the approval of the department, students will select one or more topics of critical importance in the field and will meet with faculty for independent reading, analysis, and evaluation. **Prerequisite:** Approvals of department chairperson and College of Business graduate coordinator.

MK 850 Thesis 1-6 s.h.
 For students writing the thesis, MK 850 should be scheduled for the semester in which they plan to complete their work. The thesis may be a noncommittee thesis (1-3 s.h.), with one faculty member serving as the student's adviser, or a committee thesis (4-6 s.h.), for which the student's adviser, two additional faculty members, the College of Business graduate coordinator, and/or the representative of the dean of the College of Business may constitute the committee.

MU: Music **Department of Music** **College of Fine Arts**

MU 501 Advanced Choral Conducting 2 s.h.
 Material will include large choral works with and without accompaniment. Student will be expected to develop skills in reading score.

MU 502 Advanced Instrumental Conducting 2 s.h.
 An intensive study of large instrumental works. Skill development of each individual will be stressed.

MU 506 Voice Pedagogy 3 s.h.
 Techniques in teaching voice.

MU 509 Piano Pedagogy 3 s.h.
 Survey of current and significant past developments in teaching of piano, both privately and in small and large classes. The various piano methods are analyzed, compared, criticized, and adapted to each individual's use.

MU 510 Seminar in Music 3 s.h.
 Subject matter will change each semester. Students will make presentations and write an extensive research paper. Seminar may be repeated (with departmental approval), provided subject matter is not. An in-depth study can be made of narrowly defined areas, such as life and/or works of a specific composer or group of composers.

MU 511 Composition 3 s.h.
 Composition of music in various song forms through the rondos and the larger sonata allegro form. Careful analysis of similar forms of major composers. Instruction will be highly individualized and will depend considerably on personal interest of the student.

MU 512 Advanced Orchestration 3 s.h.
 Consideration to problems of scoring for full symphony orchestra, string orchestra, and chamber orchestra. Students will produce a full score and orchestra parts so that orchestra may be tested by actual playing by the University Symphony.

MU 513 Advanced Band Scoring 3 s.h.
 Problems of scoring for modern concert band. In addition, problems of scoring for brass band, woodwind choir, and percussion ensemble will be considered.

MU 514 Advanced Choral Arranging 2 s.h.
 Four-part writing course. Five-, six-, seven-, and eight-part writing will constitute large part of the course. Special consideration will be given to problem of writing for men's and women's voices.

MU 515 Canon, Double Counterpoint, and Fugue 3 s.h.
 Application of contrapuntal techniques, through analysis and creative writing. Included will be study and writing of two- and three-voice canons; two- and three-part inventions; and two-, three-, and four-voice fugues.

- MU 516 Analytical Techniques** 3 s.h.
Study of representative compositions of various periods, with emphasis on formal harmonic and stylistic analysis. Student will develop basic analytical techniques necessary for analysis of music of any period.
- MU 535 Music for the Exceptional Student** 3 s.h.
Develops music education skills, techniques, and materials for the mentally, physically, or neurologically handicapped student and the gifted student. Designed for majors in music education, special education, or elementary education.
- MU 537 Techniques of the Marching Band** 2 s.h.
Theory and practical application of fundamentals of precision drill. This course also deals with building "half-time shows" and with materials and instrumentation of the marching band.
- MU 540-550 Summer Music Workshop** 1-3 s.h.
Concentration in special interest areas. Content varies.
- MU 551 Italian/English Diction** 2 s.h.
- MU 553 French Diction** 2 s.h.
- MU 554 German Diction** 2 s.h.
- MU 575 Music Ensemble** 1 s.h.
- MU 600 Bibliography of Music** 3 s.h.
Introduces graduate students to various types of music, music literature, and bibliographical tools which exist and which may be used in research in music. As a project, students will prepare an extensive annotated bibliography of a music subject within their special interest.
- MU 618 Comprehensive Musicianship** 3 s.h.
Combines undergraduate concepts and skills in music theory, literature, and performance at an advanced level using an integrated approach. Prepares student to function in a variety of musical roles.
- MU 619 Methods for Comprehensive Musicianship** 3 s.h.
Includes learning strategies, experiences, and activities appropriate for introducing comprehensive musicianship at elementary and secondary school levels.
- MU 620 Foundations of Music Education** 3 s.h.
Study of historical, philosophical, and social foundation of music education, including educational thought and implications for school music programs.
- MU 622 Composition II** 3 s.h.
- MU 623 Composition III** 3 s.h.
- MU 628 Contemporary International Approaches to Elementary Education** 2 s.h.
An introduction to new developments in elementary music education practices based on techniques originated by Carl Orff in Germany, Zoltan Kodaly in Hungary, and Shinichi Suzuki in Japan. Authentic adaptations of music and materials in lecture, demonstration, and workshop situations.
- MU 629 Advanced String Pedagogy** 2 s.h.
Study of specific techniques and problems of teaching violin, viola, cello, and double bass in both individual and class situations.
- MU 631 Administrative Problems in Music Education** 2 s.h.
Review of conventional administrative organization of music education in public schools. Role of music director, music specialist, consultant, and music resources teacher will be carefully defined. Consideration of problems of scheduling in public school. Current issues concerned with music education and public education in general will be considered, including curriculum development.
- MU 632 Research Techniques in Music** 3 s.h.
Study of techniques appropriate for music and music education, including selection of research problem, collection of data, types of research, survey of current research studies in music, and use of library in connection with research problems. Elements of statistics are introduced as needed to interpret research reports. As part of requirements, student will prepare a written plan for research project or thesis.
- MU 633 Comparative Choral Methods** 2 s.h.
Materials and procedures of preparation of vocal groups for public performance. Several accepted, yet contrasting, approaches will be considered, ranging from the Christiansen technique to that of John Finley Williamson. Special attention to program building.
- MU 634 Practicum in Instrumental Music** 2 s.h.
Consideration of those materials and procedures which have been proven by actual use in the United States. These various approaches will be compared and critically analyzed by the class. Rehearsal techniques, efficient use of time, and basic motivation will be stressed.
- MU 635 Psychology of Music Education** 2 s.h.
An analysis of latest evidence produced by field of psychology in music education as applied in actual classroom situations.
- MU 636 Advanced Technology of Music Education** 2 s.h.
Examination and application of modern communications media and their role in music education. Development of an experimental sound lab and use of electronic devices, synthesizers, and computers. Application of systems approach and programmed learning to music education.
- MU 699 Independent Study in Music** 1-6 s.h.
- MU 850 Thesis** 2-4 s.h.
- MU 851 Recital** 2-4 s.h.

***NU:* Nursing** **Department of Nursing** **College of Health and Human Services**

- NU 615 Advanced Nursing Research** 3 s.h.
An exploration of various research methodologies and techniques will be the focus of this course. The students will be encouraged to develop a spirit of inquiry in response to nursing problems. Emphasis on the application and critique of selected research. Development of a research proposal will be a requirement.
Prerequisite: GR 516.
- NU 617 Issues in Health Care** 3 s.h.
Study of the ethical, legal, and political dimensions of health care. Current social issues are addressed as they pertain to professional nurses and their constituency.

NU 618 Professional Role Development 3 s.h.
Advancement of the discipline through the study of nursing history and trends. Analysis of the current and changing roles of the nurse. Individual career planning.

NU 619 Leadership Strategies in Nursing 3 s.h.
Characteristics and qualities of leadership in professional nursing. Effective leadership strategies for the nurse educator, administrator, and practitioner.

NU 620 Theoretical Foundation for Nursing 3 s.h.
Contemporary theories of nursing, concept formulation, fundamental theory development, and application to nursing practice.

NU 621 Nursing Inquiry 3 s.h.
A research course. Emphasis is placed on various strategies for data collection and analysis. Students will complete a research project investigating a nursing problem. Required course for all students electing a non-thesis option. **Prerequisites:** GR 516 and NU 615.

NU 640 Dynamics of Health in the Adult 3 s.h.
Study of factors which affect the health of adults. Emphasis on normal development and physiological and psychosocial changes as the adult moves through the life span.

NU 641 Nursing Management of Adults Under Stress 3 s.h.
Nursing interventions for adults with common health stressors. Focus on the most common health problems of our population. Clinical/laboratory component provides opportunity to develop advanced assessment and interview skills. Additional requirements: professional liability insurance, CPR certification, health screening. **Prerequisite:** NU 640.

NU 699 Independent Study 3 s.h.
Under the guidance of a faculty member with necessary expertise, the student may study in depth some aspect of nursing or health care not included in required courses.

NU 724 Curriculum Development for Nursing Programs 3 s.h.
Development of curriculum philosophy, conceptual framework, objectives, and course content essential to undergraduate education in nursing. Overview of curriculum philosophies. **Prerequisites:** NU 615 and NU 620.

NU 725 Teaching Strategies for Nursing Curricula 3 s.h.
Theories of learning, instructional modalities, teaching strategies, and methods of evaluation as pertaining to nursing education in the classroom setting. **Prerequisites:** NU 620 and NU 724.

NU 726 Clinical Instruction in Nursing 3 s.h.
Design of clinical instruction for nurses. Instructional modalities, teaching strategies, and methods of performance evaluation as they pertain to nursing education in various clinical and laboratory settings. **Prerequisites:** NU 620 and NU 724.

NU 727 Principles of Nursing Management 3 s.h.
Conceptual base for nursing management roles within health care organizations. Examination of the administrative role by relating behavioral sciences and organizational and administrative theories to the delivery of nursing services. Focus on the management process as well as on issues and trends that impact on nursing management. **Prerequisites:** NU 620 and MG 613.

NU 728 Administration of Nursing Services 3 s.h.
Administrative role of the nurse executive is examined. Content focuses on evaluation and quality control within the nursing division and organizational and division finances, as well as current issues and problems of concern to nurse administrators. **Prerequisites:** NU 620, NU 727, and MG 613.

NU 740 Administration Practicum 3 s.h.
Development of the role as a nurse administrator with guidance of the nursing faculty and a mentor in a nursing administrative position. Contact hours with the mentor and weekly conferences are designed to help the student synthesize previous course material in relation to the nurse administrator. Additional requirements: professional liability insurance, CPR certification, and health screening. **Prerequisites:** MG 613, NU 620, NU 727, and NU 728.

NU 741 Education Practicum 3 s.h.
Development of role as a nurse educator with the guidance of the nursing faculty and a mentor in a nursing education setting. Contact hours with the mentor and the weekly conferences are designed to help the student synthesize and apply previous course material. Additional requirements: professional liability insurance, CPR certification, and health screening. **Prerequisites:** NU 620, NU 724, NU 725, and NU 726.

NU 742 Adult Health Nursing Practicum 3 s.h.
Continued development of advanced clinical practice in adult health nursing. Clinical experience and conferences provide opportunity for synthesis of knowledge and skills necessary for advanced nursing practice in primary, secondary, and tertiary health care settings. Special emphasis on the nurse's role as coordinator of care. Additional requirements: professional liability insurance, CPR certification, and health screening. **Prerequisites:** NU 640 and NU 641.

NU 850 Thesis 6 s.h.
Thesis should be scheduled for the semester in which the student plans to complete degree requirements. A committee of faculty members will provide thesis supervision.

PC: Psychology **Department of Psychology** **College of Natural Sciences and Mathematics**

PC 554 Developmental Psychology 3 s.h.
A comprehensive study of human growth and development from conception to death. Major research findings and developmental theories will be considered.

PC 556 The Psychology of Personality 3 s.h.
An overview of the integration of the major theories of personality.

PC 557 Abnormal Psychology 3 s.h.
Theories of pathological behavior with reference to clinical and experimental data.

PC 569 Industrial/Organizational Psychology 3 s.h.
Study of psychological principles in an organizational setting of behavior; application of psychological principles to individual behavior and experience in organizations.

PC 574 Adult Development and Aging 3 s.h.
A review of theories and research which apply to young, middle, and later adulthood, with particular emphasis on old age.

PC 578 Psychology of Death and Dying 3 s.h.
Emphasizes the theories and research which delineate the psychological factors affecting the dying person as well as those people close to someone who is dying. Psychological, social, and cognitive factors affecting one's attitude toward death and approaches to coping with dying and death are studied. **Prerequisite:** permission.

PC 581 Special Topics

3 s.h.

Designed to examine a special topic in depth. Students prepare presentations representing selected research areas. **Prerequisite:** Permission.

PC 601 Research Methods in Psychology I

3 s.h.

The design, statistical analysis, and report of laboratory experiments will be studied. **Prerequisite:** Permission.

PC 603 Evaluation Research

3 s.h.

Introduction to the methodological issues involved in validly assessing the effectiveness of intervention programs relevant to psychology (e.g., human service programs), including a consideration of how the results of evaluation research can be used to improve such programs. Students will participate in either actual or simulated evaluation research projects. **Prerequisite:** Permission. PC 601 or equivalent.

PC 610 Historical Trends in Psychology

3 s.h.

Comprehensive overview of historical antecedents of contemporary psychology. **Prerequisite:** Permission.

PC 630 Methods of Intervention I

3 s.h.

Methods of studying and improving competency in interpersonal skills as a necessary ingredient of most models of therapy, such as psychoanalysis, client-centered, and behavior modification. Emphasis is placed on theory, research, and personal competence in communication. **Prerequisite:** Permission.

PC 631 Methods of Intervention II

3 s.h.

Emphasis is placed upon the systematic study and application of social influence techniques to the modification of clinical problems. A broad spectrum of cognitive, physiological, and behavior change procedures are studied and evaluated with regard to their cost and effectiveness. A general problem-solving model for decision making, case evaluation, and accountability is advanced. **Prerequisites:** PC 630 and Permission.

PC 632 Models of Learning

3 s.h.

Several learning paradigms are described. Emphasis is on the theoretical assumptions underlying the models and their strengths and weaknesses. Applications of the models to changing maladaptive behavior are discussed. **Prerequisite:** permission.

PC 633 Clinical Group Techniques

3 s.h.

Provides instruction and experience in a variety of group techniques. Includes lectures, demonstrations, and participation in group exercises useful in the clinical psychology profession. **Prerequisite:** permission.

PC 634 Family Therapy

3 s.h.

Introduction to family and marital therapy. Both systems theory approaches and behavioral approaches will be considered. Process and outcome research will be reviewed. **Prerequisite:** permission.

PC 635 Advanced Psychopathology

3 s.h.

An in-depth study of the description, causes, and treatment of behaviors considered abnormal by our society. The course integrates and extends previous materials in abnormal behavior, assessment, therapy, research methodology, and professional practice. **Prerequisites:** previous undergraduate course in Abnormal Psychology and permission.

PC 636 Personality Theory and Systems of Psychotherapy

3 s.h.

Several major personality theories are reviewed in a comparative manner with emphasis placed upon issues such as the assumptions about the basic nature of man, personality development, normal and pathological development, and philosophy of treatment for each theory. **Prerequisite:** permission.

PC 637 Issues in Developmental Psychology

3 s.h.

The processes and structures of life span development are studied. Cognitive, emotional, social, and physical development will be explored, emphasizing the interactive effects of the person's environment, developmental level, and psychological state. **Prerequisite:** permission.

PC 638 Racial, Cultural, and Gender Issues in Psychology

3 s.h.

The operation of cultural, racial, and gender issues in the theory, research, and practice of psychology is examined. The ways in which a psychologist's own culture, race, and gender may influence professional practice are explored.

PC 641 Psychological Assessment I

3 s.h.

Beginning course in theoretical issues and development of skills in assessing psychological functioning and in report writing. Beginning emphasis on intellectual assessment, followed by the development of an increasing variety of assessment tools. **Prerequisite:** Permission.

PC 642 Psychological Assessment II

3 s.h.

Continuation of PC 641 with increased emphasis on development of skills in areas of objective and projective tests, behavioral observations, self-report measures, and other assessment techniques. **Prerequisites:** PC 641 and permission.

PC 646 Drugs and Behavior

3 s.h.

Introduction to various aspects of drugs and behavior. Includes exploration of factors influencing drug effects, problems in drug research, therapeutic use of drugs, legal use and abuse of drugs, and social aspects of drug experience. **Prerequisite:** Permission.

PC 647 Clinical Neuropsychology

3 s.h.

The study of the relationship between human brain dysfunction and abnormal behavior. Includes assessment techniques used to diagnose brain damage. **Prerequisite:** Permission.

PC 658 Advanced Social Psychology

3 s.h.

Advanced survey of the relationship between the social environment and human behavior. Topics include social influence, attitude formation and change, attribution and social cognition, interpersonal attraction, aggression, altruism, small group interaction, and environmental psychology. **Prerequisite:** Permission.

PC 660 Child Clinical Psychology

3 s.h.

Approaches unique to child psychopathology, assessment, and intervention are explored. Ages from birth to adolescence are covered. **Prerequisite:** Permission.

PC 661 Psychology and Medicine I

3 s.h.

The area of health psychology and its role in behavioral medicine are introduced. Psychophysiology, which provides much of the foundation for health psychology, is studied through readings, lectures, and hands-on experiences with psychophysiological recording equipment. **Prerequisite:** Permission.

PC 670 Therapeutic Techniques Lab

2 s.h.

This course presents didactic and experiential training in tactics of achieving insight, emotional awareness, emotional escalation or reduction, cognitive-perceptual change, and behavior change for use in individual psychotherapy. **Prerequisites:** PC 630 or equivalent, simultaneous enrollment in PC 631, and instructor permission.

PC 681 Special Topics

1-6 s.h.

Designed to examine a special topic in depth. Students prepare presentations representing selected research areas. **Prerequisite:** Permission.

PC 699 Independent Study in Psychology 1-6 s.h.
Individual students develop and conduct research studies in consultation with a faculty member. **Prerequisite:** Permission.

PC 704 Clinical Research Methods 3 s.h.
Introduction to data analysis techniques and methodological problems commonly encountered in clinical research. Methods appropriate for single subjects as well as groups are explored. **Prerequisites:** PC 601 and PC 641.

PC 706 Teaching of Psychology 1 s.h.
Basic dimensions of the teaching process are discussed including course planning and structure, developing and presenting lectures, using alternative pedagogical techniques, evaluating student performance, addressing issues of diversity in the classroom, etc. Skill-practice in these areas is emphasized. **Prerequisite:** Instructor permission.

PC 743 Psychological Assessment III 3 s.h.
Continuation of PC 642 with emphasis on nontraditional assessment methods such as family observations, mental status ratings, and social skills assessment. Topics in clinical judgment and inference and a combination of assessment data and report writing are covered. **Prerequisite:** PC 642 or permission.

PC 760 Advanced Psychotherapy with Children 3 s.h.
Theories and treatment interventions used in therapy with children are explored. Opportunities to practice basic psychotherapeutic skills in interviewing, treatment planning, and intervention provided under intensive supervision. **Prerequisite:** PC 660 or permission.

PC 761 Psychology and Medicine II 3 s.h.
The roles of psychological and environmental variables in the development, maintenance, and recovery from disease are studied. Approaches to studying relationships between stress, coping, and disease are emphasized. **Prerequisite:** PC 661.

PC 763 Advanced Family Therapy 3 s.h.
The course concerns current family therapy theories and methods with an emphasis on brief, problem-focused models of assessment and interaction. Integrative approaches and family systems consultation also will be considered. **Prerequisite:** PC 634 or its equivalent.

PC 764 Hypnotic Methods in Psychotherapy 2 s.h.
This course involves an in-depth study of theory, research, and the clinical practice of hypnosis. **Prerequisites:** PC 630, PC 635, or their equivalents, and instructor permission.

PC 770 Professional Issues 3 s.h.
An examination of professional problems in the field of clinical psychology. Includes topics such as training philosophies, licensure, legal issues such as involuntary commitment and expert witness, ethical standards, and professional organizations. **Prerequisite:** Permission.

PC 781 Special Topics 1-6 s.h.
Designed to examine a special topic in depth. Students prepare presentations representing selected research areas. **Prerequisite:** Permission.

PC 791 Family and Couples Clinic 1-6 s.h.
Students enrolled in this course will be assigned clients in the Family Clinic. A team training model is used with close supervision by the instructor. This course is available for variable credit and repeated enrollment. **Prerequisites:** PC 634 or its equivalent, successful supervised clinical experience, and instructor permission.

PC 792 Stress and Habit Disorders Clinic 1-6 s.h.
This course is a seminar/clinic in the assessment and treatment of stress and habit disorders. Clients are assigned to students from the Stress and Habit Disorders Clinic. This course is available for variable credit and for repeated enrollment. **Prerequisites:** PC 631, PC 635 or their equivalents, and instructor permission.

PC 793 Assessment Clinic 1-6 s.h.
Students will be assigned clients from the Assessment Clinic. Emphasis is placed on skill development in interviewing, administration and scoring of psychological assessment instruments, writing of reports, consultation with referral sources, and supervision. A team training model is used with close supervision by the instructor. The course is available for variable credit and for repeated enrollment. **Prerequisites:** PC 641, PC 642 or their equivalents, and instructor permission.

PC 798 Advanced Psychological Practicum 1-21 s.h.
Provides supervised experience in applied settings. Variable credit depending on setting. **Prerequisite:** Permission.

PC 799 Internship 3 s.h.
An in-depth supervised experience designed to assure a professional level of competence in several skill areas and to assist in developing an identity as a health care professional. May be taken full-time for twelve months or half-time for twenty-four months. **Prerequisite:** Permission.

PC 950 Doctoral Project (Dissertation) 9 s.h.
A culminating scholarly activity requiring the mastery of an area of professional interest. It requires a review of relevant literature and the collection and analysis of data. An oral presentation of the proposal and an oral defense of the finished product are required.

PC 951 Extended Dissertation 1 s.h.

PH: Philosophy **Department of Philosophy and Religious Studies** **College of Humanities and Social Sciences**

PH 505 Justice and Human Rights 3 s.h.
An analysis of a concept which is the focus of much moral, political, and legal dispute. Philosophical sources are supplemented by recent social science research concerning the comparative abilities of human and nonhuman animals and by environmental studies which prompt consideration of the possible rights of future generations.

PH 560 Philosophy of Language 3 s.h.
An investigation in the philosophy of language and related issues in linguistics (including anthropological linguistics, sociolinguistics, and psycholinguistics). Sample topics include the influence of language on perception, rationalistic/empiricist perspectives on language acquisition, language and political control, reference, meaning, and truth.

PH 581 Special Topics 3 s.h.

PH 599 Independent Study 1-6 s.h.

PS: Political Science

Department of Political Science

College of Humanities and Social Sciences

PS 520 International Law 3 s.h.
Study of the development, nature, and function of international law, including recent trends.

PS 521 International Organizations 3 s.h.
Inquiry into purposes, structures, and actions of contemporary international political organizations, such as United Nations, regional, and functional organizations.

PS 550 The Presidency 3 s.h.
Examines the office of President with attention to Constitutional foundations, evolution, structure, powers, and functions. Comparisons are made between Presidential and parliamentary systems and between offices of President and governor.

PS 551 The Legislative Process 3 s.h.
Legislative process in the U.S. with emphasis on Congress. Focus on organization and function of legislative bodies, with American legislative institutions compared with those of other nations.

PS 555 Intergovernmental Relations 3 s.h.
Explores the characteristics of federal system of government with emphasis on theories, origins, institutions, and problems in intergovernmental relations in the U.S.; federal systems in other nations; and trends.

PS 556 Mass Media in American Politics 3 s.h.
Variant theories of the symbiotic relationship between American politics and the press are examined in the light of American colonial-national experiences. The special Constitutional rights given to media are explored, with particular attention to radio and television.

PS 558 Judicial Process 3 s.h.
Explores nature and limits of judicial power, courts as policymaking bodies, selection of judges, decision process, external forces impinging on the courts, and role of Supreme Court in its relationship with Congress, the Presidency, and federalism.

PS 559 Constitutional Law and Civil Liberties 3 s.h.
Study of civil liberties and civil rights issues through leading Supreme Court decisions. Topics include First Amendment rights, procedural due process, and the Bill of Rights and equal protection problems.

PS 560 Classical Political Thought 3 s.h.
Evolution of Western political tradition of Constitutionalism from Plato and Aristotle to Locke and Montesquieu: religious and rational foundations; medieval theories of authority and representation; early modern theories of state and sovereignty. Concepts of law, natural rights, liberty, equality, and justice are treated in detail.

PS 561 Modern Political Thought 3 s.h.
Development of Western political thought since the mid-sixteenth century; classic liberalism; conservative thought; modern irrational ideologies such as fascism and national socialism; socialist thought; contemporary collectivist liberalism.

PS 562 American Political Thought 3 s.h.
Develops an understanding of American political thinkers from the Puritans through the current Afro-American writers. Political phenomena are examined relating to past writings, and inferences are made for future political behavior.

PS 570 Introduction to Public Administration 3 s.h.
Examines the environment of public administration, organizational structure, executive functions, the politics and tools of administration, personnel processes, financial administration, and the problems of democratic control of bureaucracy.

PS 580 Soviet Politics 3 s.h.
Essential features of Communist party and government of U.S.S.R., including geographical and historical background and ideological and theoretical foundations.

PS 581 Special Topics 1-3 s.h.
In-depth study of a specific problem or topic not regularly treated in courses. May be repeated.

PS 582-587 Political Studies 3 s.h.
Comparative study of government and politics of a selected region.

PS 582 Africa

PS 583 Asia

PS 585 Central and Eastern Europe

PS 587 Latin America

PS 588 Political-Military Strategy 3 s.h.
Deals with national security problems, including decision-making and budgeting levels of strategy, the utility of force, and the impact of the military on American society.

PS 589 Developing Nations 3 s.h.
Deals with the political characteristics of emerging nations; the impact of economic and social change upon political structure; evolving patterns of political development; and techniques of nation-building.

PS 631 Human Resource Management in Public Sector 3 s.h.
In-depth study of human resources management systems with special focus on public sector organizations. Emphasized will be the development of an understanding of traditional functional systems as well as skills necessary to successfully manage such systems.

PS 666 Public Policy Analysis 3 s.h.
Examines public policy using analytical tools and policy models. Considered within this framework are values and resources, the cultural-political environment, the policymaking process, and evaluation methods and their application to major policy areas.

PS 668 Public Sector Financial Administration 3 s.h.
Concerned with the administration of fiscal and monetary processes of government on all three levels. Included are topics related to revenue and expenditure, how the former are calculated and provided for, and how the latter are prioritized and allocated via the budgetary process; control systems which are concerned with recordkeeping and the monitoring of the flow of revenues.

PS 670 Foreign Policy Studies 3 s.h.
Considers selected problems in international affairs. Emphasis on those problems and conflicts which have evolved in the postwar era, particularly as they relate to position of the United States in world affairs. Specific problems are approached both in terms of countries involved and the existing balance in world economic, ideological, and power structure.

PS 671 Seminar in Public Administration 3 s.h.
Intensive study of role of agencies and their administrators in determining and developing public policy. Public administration in practice is emphasized by utilizing case studies.

PS 672 Comparative Political Studies 3 s.h.
Theory, structure, and function of state, county, and municipal governments are analyzed from a cooperative point of view. Special emphasis on comparing and contrasting ideas and institutions with those of the U.S.

PS 674 Analytical Techniques 3 s.h.
Exposes the student to approaches, methods, tools, focus, and boundary lines of political science study. As a research methods course in graduate political science, it should be scheduled early in the program.

PS 681 Special Topics 1-3 s.h.
In-depth study of a specific problem or topic not regularly treated in courses. May be repeated.

PS 698 Political Science Internship 3-6 s.h.
Practical experience in government and politics. Students are individually assigned to a cooperating local or state government agency, political party, or interest group or to a federal or international agency when arrangements can be made. Students report periodically to professor in charge and undertake reading assignments and write such reports and papers as the professor may require. **Prerequisite:** Must have approval of instructor and department chairperson.

PS 699 Independent Study 1-3 s.h.
Readings and written assignments on a specific topic determined by student and instructor in charge. May be repeated.

PS 850 Thesis 3 s.h.

Note: No more than 50 percent of credits counted toward the graduate degree may be in 500-level courses.

PY: Physics

Department of Physics

College of Natural Sciences and Mathematics

PY 510 Introduction to Theoretical Physics 3 s.h.
Application of mathematical methods to physical theory in area of mechanics, electricity, and magnetism, including partial differentials, vector calculus, and non-Cartesian coordinate systems.
Prerequisite: Permission of adviser.

PY 511 Secondary School Physics Laboratory Practice 1-3 s.h.
Designed not only to give the student training in use of PSSC and Harvard Project Physics laboratory materials but also to increase his/her ability to make the lab a more effective teaching tool.

PY 520 Advanced Laboratory Practice 3 s.h.
Experimental physics. Experiments are made available to supplement student's previous training. Data interpretation and experimental techniques are emphasized. Topics can include but are not limited to various methods of measurement and analysis of radioactivity, interferometry, spectrometry, microwave optics, NMR, mechanical vibrating systems, and thermal properties.

PY 531 Modern Physics 3 s.h.
An introduction to particle and wave properties of matter, atomic structure, quantum mechanics, and the quantum mechanical model of the atom.

PY 533 Thermal and Statistical Physics 3 s.h.
A unified approach to the study of thermodynamics through use of statistical methods. Temperature, entropy, chemical potential, and free energy are introduced and applied to a monatomic ideal gas

and systems of fermions and bosons in quantum and classical regions.

PY 535 Electronics 4 s.h.
DC and AC circuits, diode circuits, and transistor circuits, such as the common emitter and emitter follower amplifiers, are extensively covered. Negative feedback, operational amplifiers, oscillators, and digital logic are introduced. These topics are discussed in lecture and investigated by the student in the lab.

PY 536 Advanced Electronics 3 s.h.
Field effect transistors, noise problems, grounding and shielding, applications of digital logic, digital-to-analog-to-digital conversion techniques, transmission lines, and microprocessor applications. Two 1-hour lectures and one 3-hour lab. **Prerequisite:** PY 535.

PY 541 Analytical Mechanics I 2 s.h.
Kinematics, particle dynamics, gravitation, free and forced harmonic motion. Treatment of these topics utilizes vector calculus and differential and integral calculus.

PY 542 Analytical Mechanics II 2 s.h.
Central-force motion, high-energy collisions.

PY 545 Optics 3 s.h.
Main concepts of modern optics utilized in areas of geometrical, wave, and quantum optics. Includes presentation of illustrative examples in areas of laser technology, complex optical systems, interferometry, and spectroscopy.

PY 551 Electricity and Magnetism I 2 s.h.
Coulomb's law, electrostatic potential, Gauss's law, and dielectrics will be presented using vector calculus in a modern field formalism. **Prerequisite:** PY 510.

PY 552 Electricity and Magnetism II 2 s.h.
Biot and Savart's law, induced emf, vector potential, displacement current, special relativity, and electromagnetic radiation will be presented using techniques introduced in PY 551. **Prerequisite:** PY 551.

PY 561 Quantum Mechanics I 3 s.h.
Introduction to theory of linear vector spaces, linear operators, eigenvalues, eigenvectors and eigenfunction and their application to the harmonic oscillator, hydrogen atom, electron in a magnetic field, scattering, and perturbations. **Prerequisites:** PY 541 and PY 531 or equivalent.

PY 565 Introduction to Nuclear Physics 3 s.h.
Survey of introductory nuclear physics including nuclear size, mass, types of decay, models, forces, elementary particles, reaction theory.

PY 575 Physics of Semiconductor Devices I 3 s.h.
This course develops the basic foundation for a student of the theory of semiconductors. Elementary quantum concepts, the band theory of solids, electrical properties of solids, effective mass theory, and principles of semiconductor devices are discussed.
Prerequisites: PY 533, PY 535, PY 545, or permission of instructor.

PY 576 Physics of Semiconductor Devices II 3 s.h.
This course discusses the physics and operation of a number of discrete devices. These include bipolar transistors, MOSFETS, JFETS, various diode technologies, photovoltaic and photoconductive devices, solid state lasers, and light-emitting diodes. **Prerequisites:** PY 575 or permission of instructor.

PY 590 Solid State Physics 3 s.h.
Reciprocal lattice, crystal structure, the quantization of fields to produce quasiparticles such as phonons, magnons, and excitons. Fermi gas of electrons, energy bands, semiconductor crystals, and photoconductivity. **Prerequisites:** PY 531 and 542.

PY 599 Special Studies 1-6 s.h.
A special topic may be offered at the discretion of the department to fulfill a special necessity.

PY 600 Methods of Research in Physics 2 s.h.
Offers the student practical training in special methods and materials of research in physics. Emphasis on types of research and use of physics and physics-related journals and library facilities. **Prerequisite:** Permission of department.

PY 601 Theoretical Physics I 3 s.h.
Serves as a preparation in mathematical physics for graduate student. Included will be vector analysis, curvilinear coordinate systems, infinite series, complex variables and the calculus of residues, and ordinary and partial differential equations. **Prerequisite:** Permission of department.

PY 634 Statistical Mechanics 3 s.h.
A quantum approach to statistical mechanics. Fermi, Bose, ideal gas, and imperfect gas systems are investigated. Special topics in kinetic theory of gases, transport phenomena, magnetic systems, and liquid helium. **Corequisite:** PY 561 or its equivalent.

PY 641 Advanced Mechanics I 3 s.h.
Includes the following topics: Lagrange's equations, Hamilton's Principle, Two-body central force, Euler's Theorem, small oscillations, Hamilton's equations, canonical transformations. **Prerequisite:** PY 542 or its equivalent.

PY 651 Advanced Electromagnetic Theory I 3 s.h.
Solution of boundary value problems using Green's functions and separation of variables techniques. Cartesian and spherical coordinate systems, multiple expansions, macroscopic electrostatics and magnetostatics, Maxwell's equations, and plane electromagnetic waves. **Prerequisite:** PY 552 or equivalent.

PY 652 Advanced Electromagnetic Theory II 3 s.h.
Solution of electrostatic problems using cylindrical coordinates. Green's function for time-dependent wave equation, conservation laws, wave guides and resonant cavities, Special Theory of Relativity, simple radiating systems, and diffraction. **Prerequisite:** PY 651.

PY 657 Solid State Theory 3 s.h.
Quantum approach to solid state. Topics include second quantization of fermion and boson systems, electron theory of metals, electron-phonon interactions, and superconductivity. Selected subjects in thermal transport, magnetic phenomena. **Corequisite:** PY 561 or its equivalent.

PY 661 Quantum Mechanics II 3 s.h.
Fundamental concepts of quantum mechanics, theory of representations, and linear vector spaces. Approximation methods for stationary problems with applications to central potentials and for time-dependent problems with application to scattering and transition theory.

PY 662 Quantum Mechanics III 3 s.h.
Classical and quantum fields; interactions between Fermi and Bose fields; relativistic quantum mechanics; and Dirac theory. Introduction to propagators and Feynman diagrams with application to quantum electrodynamics and many-particle systems.

PY 690 Research Problems in Physics 1-6 s.h.
Introduction to advanced research problems through individual assignment. **Prerequisite:** permission of department.

PY 699 Independent Study 1-6 s.h.
Individualized in-depth study of an area of physics in the student's interest. Work is supervised by a physics faculty member but does not necessarily involve regular lecture or laboratory hours. The topic must be approved by the supervising faculty member and by the administration prior to the semester in which the course is to be taken.

PY 850 Thesis 1-6 s.h.

QB: Quantitative Business **Department of Management Information Systems** **and Decision Sciences** **Eberly College of Business**

QB 500 Foundations of Business Statistics 3 s.h.
A conceptual course designed to familiarize students with the basic techniques for obtaining, organizing, summarizing, analyzing, presenting, interpreting, and acting upon numerical activities. Topics include descriptive statistics, random variables, probability distributions, statistical sampling and survey methods, testing of hypotheses, analysis of variance, regression analysis, and time series. Major attention is given to identifying and describing the process involved in carrying out a statistical analysis and how statistical methods may be used within the managerial and business decision process.

QB 601 Quantitative Methods 3 s.h.
Introduction to the concepts and methods of scientific problem solving in management. Students will learn to formulate mathematical models of complex-decision problems and to solve these problems using quantitative methods. Topics covered include linear programming, inventory models, network models, waiting-line models, and simulation. **Prerequisite:** QB 215, MA 121.

SA: Safety Sciences **Department of Safety Sciences** **College of Health and Human Services**

SA 541 Accident Investigation 3 s.h.
Focuses on the various aspects of accident investigation such as recent theories associated with accident causes, investigative techniques, data acquisition, structure of investigative reports, management responsibilities, and remedial actions. Particular emphasis is placed on determining sequence of events to develop management actions which will prevent recurrence of accidents. **Prerequisite:** Permission of instructor.

SA 561 Air Pollution 3 s.h.
Focuses on the various major aspects of the air pollution problem. These include sources of pollution, evaluation and engineering control of pollutants, government regulations, atmospheric chemistry and dispersion, and human and nonhuman effects. Particular emphasis is placed on information that is practical for the safety sciences and industrial health professionals. **Prerequisites:** CH 101 and 102 or equivalent and SA 301 or equivalent courses or permission of the instructor.

SA 562 Radiological Health 3 s.h.
Involves the study of problems associated with ionizing radiation in the human environment. Emphasis is given to biological effects, radiation measurement, dose computational techniques, exposure control, and local and federal regulations. The study and use of various radiological instruments is included. **Prerequisites:** PY 112 and SA 301, or permission of instructor.

SA 581 Special Topics 3 s.h.
A dual-level elective offering in which the specific topic may vary from one term to the next. **Prerequisite:** permission of the instructor.

SA 601 Concepts of Risk Assessment 3 s.h.
The concept of risk is implicit in every justification for hazard control measures and is an important criterion in the evaluation of hazards. This course provides definitions and methods for risk measurement in various contexts. Rationale are developed for establishing acceptable risk levels and for safety management decision making.

SA 602 Quantitative Methods in Safety Management 3 s.h.
Prepares individuals for the conduct of research in safety and its numerous specialties. Research paradigms, experimental design, data sources and collection, and statistical methods are covered in detail. The emphasis throughout is on quantitative approaches likely to produce valid new knowledge in the discipline of safety management. **Prerequisites:** SA 345 and MA 217 or permission of the instructor.

SA 603 Human Relations in Safety Management 3 s.h.
Integrates various behavioral science theories into the practice of safety management. Areas covered are motivation, communications, managerial interactions, and controlling worker behavior as it relates to accident causation. **Prerequisites:** PC 101 and MG 642 or permission of instructor.

SA 604 Industrial Toxicology 3 s.h.
Principles and techniques for evaluating toxicological properties of chemical substances are studied with particular emphasis on extrapolation of information to determine permissible exposure limits in the workplace. The student is acquainted with requirements for operating an animal toxicology facility as well as means of obtaining relevant human experience data. **Prerequisites:** CH 102 and MA 217, or permission of instructor.

SA 605 Advanced Principles of Safety Engineering 3 s.h.
This course prepares the student with a fundamental understanding of those hazards which can contribute to accidental injury and damage. These hazards are studied in an engineering context; their physical and chemical characteristics are studied in depth in order to make the appropriate hazard control measures better understood. **Prerequisites:** SA 111, SA 211, and PY 112 or permission of the instructor.

SA 606 Hazardous Materials Management 3 s.h.
This course offers the student a logical approach to the problem of hazardous materials management. Emphasis is on legislative controls with which industry must comply in shipping, storing, using, and disposing of hazardous materials. Program development in hazardous materials is covered in detail. **Prerequisites:** SA 311, CH 101, and CH 102 or permission of instructor.

SA 620 Safety Data Management 3 s.h.
Covered are design of loss incident source documents and code dictionaries; procedures to collect accident cost and cause data; accident cause analysis; and data for management accountability and decision making. **Prerequisites:** SA 412 and IM 241 or permission of instructor.

SA 623 Advanced Safety Administration 3 s.h.
Analyzes the management structure for its procedures, organizations, policies, and departmental competencies as they relate to safety. Ways to audit and improve management's safety effectiveness are covered. **Prerequisites:** SA 412 and MG 330 or permission of instructor.

SA 643 Construction Safety 3 s.h.
Provides an in-depth treatment of hazard recognition, evaluation, and control principles used in the construction industry. Extensive coverage of federal standards is given, together with the means by which a construction safety program can be developed and administered. **Prerequisite:** SA 211 or permission of the instructor.

SA 663 Industrial Hygiene Laboratory Methods 3 s.h.
Laboratory methods germane to industrial hygiene sampling and analytical methods are studied in depth. The student is introduced to a variety of laboratory procedures as well as biological monitoring. Sampling and analytical statistics are also emphasized. **Prerequisites:** SA 302 and SA 303 or permission of instructor.

SA 672 Process Safety in the Chemical Industries 3 s.h.
This course is designed to cover all important aspects of loss prevention as it is practiced in the chemical process industries. Its objective is to prepare the safety professional so that he/she may be able to work more effectively with chemists and chemical engineers in joint hazard identification, evaluation, and control projects. **Prerequisite:** SA 311 or equivalent or permission of instructor.

SA 673 Disaster Preparedness 3 s.h.
Principles and techniques for preparing for various types of disasters. The students are acquainted with requirements necessary to develop workable plans for natural and industrial types of disasters. Loss prevention measures are discussed, directed toward preservation of organization resources. **Prerequisite:** SA 311 or equivalent or permission of instructor.

SA 674 Fire Safety in Building Design 3 s.h.
The student is provided with the necessary concepts and principles for the safe design of buildings from a fire hazard standpoint. Emphasis is given to adequate understanding of fire properties as they influence selection of materials for construction, fire prevention facilities, and fire suppression considerations. **Prerequisite:** SA 311 or equivalent, or permission of instructor.

SA 681 Special Topics 3 s.h.
A graduate-student-only elective offering in which the specific topics may vary from one term to the next. **Prerequisite:** Permission of instructor.

SA 699 Independent Study 3 s.h.
Study in depth of a topic not available through other course work. Student works with supervising faculty member on carefully planned, student-initiated project. Prior approval is necessary. **Prerequisite:** Permission of instructor.

SA 850 Thesis 3 s.h.
The thesis will require a committee review with one faculty member serving as the student's adviser. The committee will also include two additional faculty members and a representative of the dean of the College of Health and Human Services. **Prerequisite:** Permission of instructor.

SH: Speech-Language Pathology

Department of Special Education and Clinical Services

College of Education

SH 600 Neurolinguistics 3 s.h.

An overview of basic anatomy of those portions of the central nervous system that control linguistic functions, hypotheses accounting for evolution of the linguistic system, and the neurological control of human communication. The course will prepare the student for advanced study of speech and language development and neurogenic communication disorders of children and adults. **Prerequisite:** Graduate status in Speech-Language Pathology or permission of the instructor.

SH 604 Diagnostic Methods 3 s.h.

Evaluation of tests and techniques of diagnosis of speech and language disorders; interpretation of results and planning appropriate subsequent case management. Interviewing techniques appropriate to case history taking. Writing of diagnostic and case history reports.

SH 610 Articulation 3 s.h.

Linguistic approach to articulatory process and analysis of misarticulation as symptoms of language dysfunction; variables related to articulatory mastery; programmed, traditional, and sensory-motor methods of modifying articulatory behavior.

SH 616 Stuttering 3 s.h.

Nature and causes of stuttering. Emphasis on diagnosis and management. Counseling and learning theory application as two main approaches to treatment. Consideration of the person as a stutterer. Review of pertinent and recent research topics.

SH 618 Voice 3 s.h.

Scientific principles of voice production and modification with emphasis on physiology, pathologies, or malfunctioning which produce voice defects; relationship between disorders of voice and personality; diagnostic and therapeutic considerations for both organic and psychogenic disorders, including the laryngectomized.

SH 630 Language Disorders of Children 3 s.h.

Anatomical, physiological, psychological, neurological, and environmental factors related to language delay or disordered language acquisition. An inventory of language skills and means of fostering their development or compensating for inadequacies: a holistic versus specific approach to programs of remediation. **Prerequisite:** SH 600.

SH 632 Neurological Communication Disorders 3 s.h.

Consideration of language, speech, and related problems resulting from neurological insult. Neurological dysfunctioning will be highlighted. Diagnosis and management of persons with aphasia, agnosias, apraxias, and dysarthrias will be emphasized, as well as the role of the family in rehabilitation and family counseling.

SH 635 Seminar in Communication 1-3 s.h.

Intensive study of one or more areas of speech science, speech and language pathology, or audiology. Topics vary to meet the student's needs and interests. Course may be repeated for credit with a change in area considered. **Prerequisites:** Speech-Language Pathology major, admission to degree candidacy, and adviser approval.

SH 640 Diagnostic Audiology 3 s.h.

Identification and description of types of hearing impairment by standard audiometric procedures including pure tone, speech, and

site of lesion batteries. Testing of special populations as well as evaluation for fitting of amplification.

SH 661 Advanced Clinical Practicum I 2-6 s.h.

Supervised practicum experience in the University Speech and Hearing Clinic with individuals exhibiting speech, language, and/or hearing dysfunction. Planning and administration of programs of therapy plus interviewing, diagnosing, counseling, and report writing.

SH 662 Diagnostic Clinic 1 s.h.

Supervised practicum experience in performing in-depth diagnostic evaluations with individuals exhibiting any type of speech, hearing, or language dysfunction. Experience in taking case histories, conferring with patients, and report writing.

SH 663 Hearing Testing Clinic 1 s.h.

Supervised practicum experience in performing diagnostic audiological tests.

SH 671 Advanced Clinical Practicum II 1-6 s.h.

Similar to SH 661; students assume more responsibility, and experience may take place at approved off-campus sites. **Prerequisite:** SH 661.

SH 681 Special Topics

SH 696 Internship in Hospitals 6 s.h.

Supervised clinical experience in off-campus hospital settings with individuals exhibiting speech, language, and/or hearing dysfunction. Planning and implementing programs of therapy plus interviewing, diagnosing, counseling, and report writing. **Prerequisites:** Methodology and on-campus practicum courses, permission of graduate coordinator.

SH 697 Internship in Community Agencies 6 s.h.

Supervised clinical experience in off-campus community agency settings with individuals exhibiting speech, language, and/or hearing dysfunction. Planning and implementing programs of therapy plus interviewing, diagnosing, counseling, and report writing. **Prerequisites:** Methodology and on-campus practicum courses, permission of graduate coordinator.

SH 698 Internship in Schools 6 s.h.

Supervised clinical experience in school settings with individuals exhibiting speech, language, and/or hearing dysfunction. Planning and implementing programs of therapy plus interviewing, diagnosing, counseling, and report writing. **Prerequisites:** Graduate methodology, on-campus practicum courses, permission of graduate coordinator, and undergraduate Professional Education Sequence.

SH 850 Thesis 3 s.h.

SO: Sociology

Department of Sociology

College of Humanities and Social Sciences

SO 527 Spouse Abuse 3 s.h.

Considers the range of theoretical explanations for the pervasive violence between husband and wife, cohabitating partners, or dating couples. Research on spouse abuse and its implications for treatment programs, criminal justice intervention, and social policy are discussed.

SO 528 Child Abuse 3 s.h.
The prevalence, etiology, and social implications of physical, sexual, and emotional abuse and child neglect are examined. Intervention strategies for individual perpetrator and victim and for the family unit and prevention strategies for the community are also presented and critiqued.

SO 542 Social and Cultural Aspects of Health and Medicine 3 s.h.
Review of fields of medical sociology and anthropology; focuses on such topics as social background of illness, folk medicine, cultural differences in perceptions of health, and social organization of health facilities.

SO 581 Special Topics in Sociology 3-6 s.h.
Seminar focuses on specialized areas in the discipline not covered by regular courses. Students will do extensive reading in the area. Courses may be repeated under different subtitles.

SO 610 Sociology of Human Services 3 s.h.
Introduction to the theoretical and applied roles of human services in our society. Organizational theories, delivery systems models, and implementation issues are discussed.

SO 611 Human Services Administration 3 s.h.
Examines the management of human service agencies, including personnel supervision, financial planning, public relations, and social policy issues. Evaluation design, program monitoring, and social impact measurement are also discussed.

SO 621 Sociology of Health Care 3 s.h.
Examines the contrasting perspectives in the field of medical sociology, the structure of health care institutions, and the operation of health care providers. The social, environmental, and occupational factors in health and disease are considered as well.

SO 630 Seminar in Alcohol and Drug Abuse 3 s.h.
The social and personal problems associated with alcohol and drug abuse are considered. Attention will be given to the etiology, social factors, and economics of abuse, as well as to prevention and intervention issues.

SO 632 Addiction and the Family 3 s.h.
Assesses the impact of alcohol or drug addiction on individuals and their families. Research on addiction patterns, codependency, and family treatment are discussed. Special attention is given to gender and racial differences in addiction and their impact on the family.

SO 640 Community Development and Social Policy 3 s.h.
Considers strategies to improve communities economically and socially. Social policy implementation, technical assistance, and community organizing are examined, along with conflict resolution.

SO 642 Industrial Sociology 3 s.h.
Examines structure and exercise of corporate power. Attention is given to relationships between industry, government, and communities and the transformation of the workplace in the twentieth century.

SO 654 Social Inequality 3 s.h.
Examines central theoretical perspectives on social inequality. Considers such topics as the nature of social classes and inequality; characteristics of working class, poor, and super-rich; gender and racial inequality; and how social policies effect inequality in the United States.

SO 656 Social Change 3 s.h.
Explores nature and consequences of social change, alternative theoretical perspectives on social change, and how social change

might be implemented. Also discusses lessons to be learned from various planned change efforts.

SO 657 Aging and Society 3 s.h.
Focuses on the social problems encountered by aging individuals in various societies. The impact of sociological factors, such as social class, ethnicity, and technological change, on the lives of the elderly are studied. The institutional structures and services designed to cope with changing demographics are also discussed.

SO 662 The Sociology of Deviance 3 s.h.
Relationship between individual deviance and social and cultural factors is examined. How different groups set limits for acceptable behavior is analyzed in comparative and historical context.

SO 664 Research Seminar in Sociology 3 s.h.
Examination of diverse research designs in the social sciences. Focuses on understanding and critique of designs in the social sciences and on integration of theory and research. Special attention given to development of thesis proposal. Required for M.A. in Sociology.

SO 665 Microcomputing Applications in Sociology 3 s.h.
Analysis of data for social research, human service agencies, or policy organizations. Students develop database management systems which can be applied to social research, human service agencies, or policy organizations, as well as spreadsheets for program budgeting, evaluations, and forecasting. Required for M.A. in Sociology. **Prerequisite:** CO 101 or equivalent.

SO 667 Contemporary Sociological Theory 3 s.h.
Examination of major systems of sociological theory and major theoretical controversies vying for attention in contemporary sociology. Emphasis given to theories in macro-sociology, especially functionalism, neo-Marxian conflict theory, and societal evolutionism. Required for M.A. in Sociology.

SO 681 Special Topics in Sociology 3-6 s.h.
Seminar focuses on specialized areas in the discipline not covered by regular courses. Students will do extensive reading in the area. Courses may be repeated under different subtitles.

SO 690 Readings in Sociology 3 s.h.
Students report and develop extensive bibliographies on assigned readings for in-depth understandings of a specific sociological concept, process, or problem.

SO 698 Internship 3-6 s.h.
Supervised experience in public or private organizations that extends and complements classroom instruction. Students gain practical experience and apply their skills to human service agencies, policy organizations, or research settings. **Prerequisite:** Permission.

SO 699 Independent Study in Sociology 1-3 s.h.
Students wishing to specialize beyond course work are encouraged to work on a one-to-one basis with faculty members in independent study. Students may elect up to a total of 6 semester hours of independent study.

SO 701 Social Policy Issues in Organizations 3 s.h.
Analyzes impact and implementation of selected social policies (e.g., affirmative action, sexual harassment, substance abuse policy) in human organizations. Assesses efforts to enhance and respond effectively to ethnic, racial, social class, and gender diversity in organizations.

SO 850 Thesis

6 s.h.

For the student writing the thesis. A thesis proposal must be submitted to the department's graduate coordinator and approved by the Sociology Graduate Committee prior to registering for thesis credits. A completed thesis involves a supervised research project approved by a committee composed of the student's thesis adviser and two additional faculty members.

SP: Spanish
**Department of Spanish and Classical Languages
College of Humanities and Social Sciences**
SP 580 Foreign Study-Mexico (optional)

1-3 s.h.

Intensive study of Spanish language and Mexican culture in Mexico, from approximately May 18 to July 1. Credits subject to approval by the director of the program.

SS: Social Sciences
College of Humanities and Social Sciences
SS 599 Contemporary Europe

3 s.h.

A study/tour program in Europe, commonly of three weeks' duration each summer. Itinerary varies but normally includes the cities of London, Paris, Florence, and Rome and the countries of Austria and Switzerland. Program atmosphere is informal and always fun and tiring (lots of walking). Informal lectures on site and guided tours. Academic work includes reading before departure and keeping a daily log.

ST: Student Affairs in Higher Education
**Department of Counseling, Adult Education, and
Student Affairs
College of Education**
ST 626 History of Higher Education in the United States

3 s.h.

Growth and trends in higher education with emphasis on the twentieth century. In addition to the traditional modes of postsecondary education, continuing education programs, community colleges, and adult education will also be examined. A secondary focus will be the evolving role of student affairs.

ST 627 Student Affairs Functions in Higher Education

3 s.h.

Overview of student personnel work in higher education, highlighting functional areas of student personnel, organization, philosophy, and the role of the services applied to the institution and the profession.

ST 628 The American College Student

3 s.h.

An examination is made of the culture of undergraduate students in American higher education to prepare professionals for the clients they will serve. Focus is given to the changing student clientele and its subgroups and cultures. Undergraduate characteristics, attitudes and values, and broad issues regarding undergraduate participation in the educational experience will be explored.

ST 629 Student Development in Higher Education

3 s.h.

Provides an overview of student development theories and the student development model. Includes the application of assessment, goal setting, intervention strategies, environmental management, and evaluation in higher education settings. Explores issues such as changing sex roles, sexual identity, life planning, and needs of special student groups.

ST 633 Evaluation Techniques

3 s.h.

Basic statistical and measurement concepts utilized in testing and test interpretations, with emphasis on the administration, scoring, validity, and reliability of assessment instruments for student affairs. Methodological principles of survey research and program evaluation are also included. Students cannot take both ST 633 and CE 633.

ST 637 Counseling and Consultative Theory

3 s.h.

Theories, objectives, principles, and practices of counseling and consulting with individuals are covered. Counseling skills and interviewing techniques are presented and practiced to prepare the student for the practicum experience.

ST 646 Interpersonal Sensitivity

3 s.h.

Participants will explore their interpersonal interaction style in groups and individually. Human potential of the students will be developed as they enter into authentic, honest, and trusting relationships within the context of a small-group experience, encouraging an examination and understanding of oneself and one's impact on others.

ST 681 Special Topics

3 s.h.

ST 728 Internship in Student Affairs

3 s.h.

Affords the student an opportunity to gain practical experience in dealing with theories of his/her specialties. Includes one or two semesters in one of the student personnel offices at IUP or another institution under the leadership of a departmental director or coordinator.

**ST 730 Management of Organizational
Behavior in Higher Education**

3 s.h.

The course teaches managerial concepts and skills for managing student personnel programs or services. Concepts covered include the Process School of Management, Situational Leadership, Ethics, and Management Theory models.

ST 741 Supervised Practicum

3 s.h.

Practicum experience is gained in counseling and consulting techniques including interviews, observations, mentoring relationships, group interaction, and developmental workshops. The development of effective helping skills for work with college students is emphasized. Students cannot take both ST 741 and CE 741.

ST 850 Thesis

3 s.h.

Graduate School Deadlines

The following dates are deadlines for application to graduate study, applications for graduation, and submission of thesis/dissertation materials. Some departments have established earlier deadlines for application to graduate study.

Application for Graduate Study

Students who plan to take graduate work must have an application for graduate study approved on or before the following dates:

Term	Deadline
Summer Sessions	April 1
Fall Semester	July 1
Spring Semester	November 1

Applications for Graduation and Submission of Thesis/Dissertation Materials

For a December Graduation:

May 15	Doctoral candidates must have filed a Research Topic Approval Form in the Graduate School.
August 15	Master’s candidates must have filed a Research Topic Approval Form in the Graduate School.
October 1	Both master’s and doctoral candidates must have filed an application for graduation with the Graduate School.
November 15	Archival copies of signed thesis and the necessary forms and fees must have been submitted to the Graduate School.

For a May Graduation:

August 15	Doctoral candidates must have filed a Research Topic Approval Form in the Graduate School.
December 15	Master’s candidates must have filed a Research Topic Approval Form in the Graduate School.
March 1	Both master’s and doctoral candidates must have filed an application for graduation with the Graduate School.
April 15	Archival copies of signed thesis and the necessary forms and fees must have been submitted to the Graduate School.

For an August Graduation:

December 15	Doctoral candidates must have filed a Research Topic Approval Form in the Graduate School.
May 15	Master’s candidates must have filed a Research Topic Approval Form in the Graduate School.
June 1	Both master’s and doctoral candidates must have filed an application for graduation with the Graduate School.
July 15	Archival copies of signed thesis and the necessary forms and fees must have been submitted to the Graduate School.

Please note: The dates for filing the “Research Topic Approval Form” preparatory to writing a thesis or dissertation are also listed in the *Thesis/Dissertation Manual* available in the Graduate School.

Telephone Numbers

If you have a question concerning a specific graduate program at IUP, please contact the department chairperson. Telephone numbers are listed below for your convenience. The area code for IUP is 412.

Academic Departments

Anthropology	357-2730
Art	357-2530
Biology	357-2352
Business	357-2522
Chemistry	357-2361
Communications Media	357-2493
Computer Science	357-2524
Counseling, Adult Education, and Student Affairs	357-2306
Criminology	357-2720
Economics	357-2640
Educational Psychology	357-2445
English	357-2261
Food and Nutrition	357-4440
Foreign Languages	357-2325
Foundations of Education	357-2225
Geography and Regional Planning	357-2250
Geoscience	357-2379
Health and Physical Education	357-2770
History	357-2284
Human Development and Environmental Studies	357-2336
Industrial and Labor Relations	357-4470
Mathematics	357-2608
Music	357-2390
Nursing	357-7647
Philosophy	357-2310
Physics	357-2370
Political Science	357-2290
Professional Growth	357-2222
Professional Studies in Education	357-2400
Psychology	357-2426
Reading	357-2400
Safety Sciences	357-3018
Sociology	357-2730
Special Education and Clinical Services	357-2450
Theater	357-2965

Other Frequently Called Numbers (All numbers are within the 412 area code.)

University Operator	357-2100
Graduate Admissions	357-2222
Campus Dining (ARA)	357-2570
Campus Police and Parking/Traffic Control	357-2141
Career Services	357-2235
Co-op Store (Bookstore)	349-1194
Financial Aid	357-2218
Graduate School	357-2222
Office of Housing and Residence Life	357-5639
Pechan Health Center	357-2550
Registrar	357-2217
Stapleton Library	357-2330

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 College of Humanities and Social Sciences
Allan T. Andrew, Dean's Associate,
 College of Natural Sciences and Mathematics
Aleksandra B. Kaniasty, Assistant to the Dean,
 College of Natural Sciences and Mathematics

Department Chairpersons

Eberly College of Business

Duane M. Ponko	Accounting
Terry T. Ray	Finance and Legal Studies
Thomas W. Falcone	Management
Kenneth L. Schildt	Management Information Systems and Decision Sciences
Krish S. Krishnan	Marketing
Sharon D. Steigmann	Office Systems and Business Education

College of Education

Kurt P. Dudd	Communications Media
Gary J. Dean	Counseling, Adult Education, and Student Affairs
William F. Barker	Educational and School Psychology
Kurt P. Dudd, Interim	Foundations of Education
Edwina B. Vold	Professional Studies in Education
Clarice K. Reber	Special Education and Clinical Services
Marilyn S. Howe, Head	University School

College of Fine Arts

Anthony G. DeFurio	Art
Calvin E. Weber	Music
Amie-Laurie Wheat	Theater

College of Health and Human Services

Joanne B. Steiner	Food and Nutrition
James G. Mill, Jr.	Health and Physical Education
Jeffrey Miller	Hotel, Restaurant, and Institutional Management
Donna L. Streifelhau	Human Development and Environmental Studies
Jodell L. Kuzneski	Nursing and Allied Health
Helen C. Cunningham, Coordinator	Allied Health Professions
Robert D. Soule	Safety Sciences

College of Natural Sciences and Mathematics

Robert S. Prezant	Biology
Pothen Varughese	Chemistry
Gary L. Butterbaugh	Computer Science
Frank W. Hall, II	Geoscience
Gerald M. Burriok	Mathematics
Allan T. Andrew, Coordinator	Natural Science
Dennis W. Whitson	Physics
Carl W. Schneider	Psychology

College of Humanities and Social Sciences

Miriam S. Chaiken	Anthropology
Joseph A. Bogan	Criminology
Donald A. Walker	Economics
Donald S. McClure	English
Robert L. Whitmer	French
Susan E. Forbes	Geography and Regional Planning
Jacob U. Voelker	German
Neil B. Lehman	History
James F. Byers	Industrial and Labor Relations
Patricia I. Heilman	Journalism
Albert E. Bouffard	Philosophy and Religious Studies
David D. Chambers	Political Science
Herbert M. Hunter	Sociology
Peter G. Broad	Spanish and Classical Languages

Departmental Units

John A. Mills	Counseling and Student Development
Sally A. Lipsky	Learning Center
Walter R. Laude	Libraries and Media Resources
Sandra J. Durbin	Vocational Personnel Program
Catherine M. Dugan	Advising and Testing Center

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Esther M. Shane, Director, Speech and Hearing Clinic
Robert H. Hoellein, Director, Child Study Center

School of Continuing Education

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Patricia D. Scott, Director, Off-Campus Studies



Graduate Coordinators

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Trenton R. Ferro	Adult and Community Education	V.J. Wijekumar	Physics
Chris L. Weiland	Art	Dagem Dejene	Political Science/Public Affairs
Sandra J. Newell	Biology	Cathy C. Kaufman	Principal Certification
Wayne A. Moore	Business (M. Ed.)	Yaw A. Asamoah	Professional Growth
Krish S. Krishnan	Business (M.B.A. E.M.B.A.)	Mary R. Jalongo	Early Childhood Education
John C. Woolcock	Chemistry	Frank Corbett, Jr.	Elementary Education (M.Ed.)
Robert I. Witchel	Counselor Education	George R. Bieger	Elementary Education (D.Ed.)
Kathleen J. Hanrahan	Criminology (M.A.)	Linda L. Williams	Reading
John J. Gibbs	Criminology (Ph.D.)	Rosalyn H. Gates	Reading (Pittsburgh)
Mary Ann Rafoth	Educational Psychology (M.Ed.)	Donald U. Robertson	Clinical Psychology (Psy.D.)
John P. Quirk	Educational and School Psychology (D.Ed.)	Lon H. Ferguson	Safety Sciences
Barbara H. Hudson	English, Rhetoric and Linguistics	Rosalyn B. Darling	Sociology
Malcolm Hayward	English, Literature and Criticism	Dianne R. Ferrell	Special Education-Exceptionality
Joanne B. Steiner	Food and Nutrition	David W. Stein	Special Education-Speech/Language Pathology
Donald W. Buckwalter	Geography	James G. Mill	Sport Sciences
Gary L. Bailey	History	Ronald W. Thomas	Student Affairs in Higher Education
James F. Byers	Industrial and Labor Relations	Robert L. King	Teacher Certification
Lawrence M. Feldman	Elementary Mathematics		
Margaret M. Stempien*	Mathematics Education (Secondary)		
Rebecca A. Stoudt	Applied Mathematics		
Carl J. Rahkonen	Music		

*On leave, 1995/96.

A

Academic Credits, 25
 Academic Good Standing, 25
 Academic Integrity Policy, 27
 Accreditation, 6
 Add/Drop Policy, 21
 Administrative Officers, 113
 Administrative Certification Programs, Specialist and
 Letter of Eligibility Programs, 14
 Administration and Leadership Studies, 41
 Admission, 13
 Admission Classifications, 13
 Admission Procedures, 13
 Admission Requirements, 13
 Adult and Community Education (*see Counseling,
 Adult Education, and Student Affairs*)
 Advisement, 21
 Application Fee, 15
 Application for Federal Student Aid, Free (FAFSA), 20
 Applied Mathematics (*see Mathematics*)
 Art Department, 45
 Assistantships, 18
 Audit Fee, 15
 Audit Policy, 25
 Auditing, Course, 25
 Automobiles, 10

B

Billing, 21
 Biochemistry (*see Chemistry*)
 Biology Department, 62
 Buildings and Grounds, 6
 Business, Eberly College of, 31
 Business Education, 33

C

Cable Television and Data Lines, 10
 Calendar, inside front cover
 Cancellation, Class (*see Inclement Weather Policy*)
 Candidacy Examination, Doctoral, 23
 Career Services, 9
 Centers and Institutes, 8
 Certification, Principal, 14
 Certification (Teacher Education), 27

Chemistry Department, 63
 Class Cancellation (*see Inclement Weather Policy*)
 Clinical Psychology (*see Psychology*)
 Cocurricular Activities and Student Organizations, 12
 Communications Media Department, 34
 Completion of Degree Requirements
 Comprehensive Examination, Doctoral, 23
 Computer Center (*See Information Systems
 and Communications Center*)
 Computer Software Policy, 26
 Conduct, Student, 11
 Consumer Services Department, 78
 Co-op Recreation Park, 12
 Co-op Store, 12
 Cooperative Programs
 Continuous Registration, 24
 Council of Trustees, 113
 Counseling, Adult Education, and Student Affairs
 Department, 34
 Counseling and Student Development Center, 11
 Counselor Education (*see Counseling, Adult Education,
 and Student Affairs*)
 Course Advising, 21
 Course Descriptions, 70
 Adult and Community Education (AC), 70
 Administrative Services (AD), 70
 Accounting (AG), 70
 Art History (AH), 71
 Applied Music (AM), 71
 Anthropology (AN), 71
 Art (AR), 72
 Business Education (BE), 72
 Biology (BI), 73
 Business Law (BL), 74
 Counselor Education (CE), 74
 Chemistry (CH), 75
 Communications Media (CM), 76
 Criminology (CR), 77
 Consumer Services (CS), 78
 Education Administration (EA), 79
 Economics (EC), 79
 Education (ED), 79
 Early Childhood Education (EE), 80
 Elementary Education (EL), 80

Course Descriptions (*Continued*)

Elementary and Middle School Mathematics (EM), 82
 English (EN), 83
 Educational Psychology (EP), 85
 Education of Exceptional Persons (EX), 86
 Foundations of Education (FE), 87
 Finance (FI), 88
 Food and Nutrition (FN), 88
 Geography and Regional Planning (GE), 89
 Graduate General Service (GR), 90
 Geoscience (GS), 91
 Home Economics Education (HE), 91
 History (HI), 92
 Health and Physical Education (HP), 93
 Information Management (IM), 94
 Administration and Leadership Studies (LP), 95
 Industrial and Labor Relations (LR), 95
 Mathematics (MA), 96
 Management (MG), 98
 Music History (MH), 98
 Marine Science (MI), 99
 Marketing (MK), 99
 Music (MU), 99
 Nursing (NU), 100
 Psychology (PC), 101
 Philosophy (PH), 103
 Political Science (PS), 104
 Physics (PY), 105
 Quantitative Business (QB), 106
 Safety Sciences (SA), 106
 Speech-Language Pathology (SH), 108
 Sociology (SO), 108
 Spanish (SP), 110
 Social Sciences (SS), 110
 Student Affairs in Higher Education (ST), 110

Course Numbering, 25

Course Prefix Key, 30

Course Overlaps in Degree Programs, 25

Course Repeat Policy, 25

Course Withdrawal, 17

Credentials Service, 9

Credit Requirements, Doctoral, 23

Credit Transfers, 22

Criminology Department, 52

D

Damage Fees, 15

Data Lines and Cable Television, 10

Degree Candidacy, Doctoral, 23

Degree Candidacy, Master's, 22

Degree Eligibility of IUP Teaching Staff, 26

Degree Fee, 15

Delinquent Accounts, 15

Department Chairpersons, 114

Dietetic Internship (*see Food and Nutrition*)

Dining Services, 10

Disability Support Services, 10

Discrete Course Withdrawal, 18

Dissertation, 24

Dissertation Committee, 24

Dissertation Process, 24

Dissertation Publication, 24

Doctoral Degree Programs, 23

Drop/Add Policy, 21

Dual-Level Courses, 25

E

Early Childhood Education (*see Professional Studies in Education*)

Eberly College of Business, 31

Economics Department, 79

Education, College of, 34

Education of Exceptional Persons (*see Special Education and Clinical Services*)

Educational and School Psychology Department, 36

Educational Services Fee, 15

Elementary and Middle School Mathematics (*see Mathematics*)

Elementary Education (*see Professional Studies in Education*)

Elementary or Secondary School Counseling (*see Counseling, Adult Education, and Student Affairs*)

Eligibility and Application for Graduation, 22, 24

Eligibility, IUP Teaching Staff, 26

English Department, 54

Employment Programs, 19

Examination Requirements, GRE and other, 14

Examinations, Comprehensive, 23

F

FAFSA, 20
 Facilities Fee, 15
 Federal College Work Study Program, 19
 Federal Family Educational Loan Programs, 20
 Federal Supplementary Loan for Students (SLS), 20
 Fees, 15
 Fellowships, 19
 Filcik, Julius, Doctoral Fellowship, 19
 Final Credits Policy, 26
 Finance and Legal Studies Department, 88
 Finances, 15
 Financial Aid, 18
 Fine Arts, College of, 45
 Food and Nutrition Department, 48
 Foreign Language/Research Tool Options, Doctoral, 24
 Foundation for IUP, 8
 Foundation Fellowship, 19
 Free Application for Federal Student Aid (FAFSA), 20
 Full Time Student, 15

G

General Information, 25
 General Policies and Procedures, 25
 Geography and Regional Planning Department, 58
 Grade Appeal Policy, 28
 Grading System, 26
 Graduate Course Scheduling by Undergraduates, 25
 Graduate Management Admission Test, 13
 Graduate Merit Scholarships, 19
 Graduate Record Examination, 13
 Graduate Scholars Program, 19
 Graduate School Deadlines, 111
 Graduate Student Assembly, 12
 Graduate Study Beyond the Master's Degree, 26
 Graduation, 22
 Graduation Application, 22
 Grant Employment, Special Funded, 20

H

Hadley Union Building, 12
 Harte, Margaret Flegel Scholarships, 19
 Health and Human Services, College of, 48

Health and Physical Education Department, 49
 Health Fee, 15
 Health Insurance, 11
 Health Services, 11
 History Department, 59
 History of the University, 5
 Housing, 10
 Humanities and Social Sciences, College of, 52

I

Inclement Weather Policy, 2
 Independent Study, 26
 International Student Applicants, 13
 Internship Policy, 26
 Industrial and Labor Relations Department, 59
 Information Systems and Communication Center, 7
 Institute for Research and Community Service, 8
 Insurance for Personal Belongings, 10
 Insurance, Health, 11
 IUP Foundation Fellowship, 19

J

Journal Publications, 8

L

Labor Relations (*see Industrial and Labor Relations*)
 Late Registration Fee, 15
 Law School Admission Test, 9
 Letter of Eligibility Programs, 14
 Library and Media Services, 6
 Literature and Criticism (*see English*)
 Loan Programs, 20
 Location, 5

M

M.A./TE (*see English*)
 M.B.A. (*see Business*)
 M.F.A. (*see Art*)
 Master's Degree Programs, 22
 Mathematics Department, 64
 Media Services, 6
 Medical College Admission Test, 9
 Merit Scholarships, Graduate, 19
 Miller Analogies Test, 9, 14
 Music Department, 46

N

National Teacher Examination. 9
 Natural Sciences and Mathematics. College of. 62
 Nonprofit Loans. Private. 20
 Nursing Department. 50
 Nutrition. Food and. 48

O

Off-Campus Graduate Programs Withdrawal and Refund Policy. 18
 Office of Housing and Residence Life. 10
 Office for International Services. 14
 Out-of-State Tuition. 15

P

Part-time Study. 13, 15
Penn, The. 9
 Physics Department. 66
 Political Science Department. 59
 Post Office. 10
 Principal Certification. 14
 Private. Nonprofit Loans. 20
 Professional Studies in Education Department. 38
 Professional Growth. 69
 Program Changes. 27
 Psychology Department. 67
 Public Affairs (*see Political Science*)
 Public History (*see History*)
 Publications. 9

Q

Quality Points. 25

R

Reading (*see Professional Studies in Education*)
 Refrigerator Rentals. 10
 Refund Policy. 16
 Regional Planning (*see Geography and Regional Planning*)
 Registration (*See Terminal Registration or Telephone Registration*)
 Registration. Continuous. 21
 Religious Life. 11
 Repeat Policy. Course. 25
 Requirements. Doctoral Degree. 23

Research Courses. 90
 Research Proposal. Doctoral. 24
 Research Tool Options. Doctoral. 24
 Residence Life. Office of. 10
 Residence Halls. 10
 Residency Requirement. 22
 Rhetoric and Linguistics (*see English*)
 Rights and Responsibilities. Student. 27

S

SSHE. 5
 Safety Sciences Department. 51
 Scholarship Information. 19
 Secondary School Mathematics (*see Mathematics*)
 Schedule Adjustment. 21
 Scheduling by Undergraduates. Graduate Courses. 25
 Scholarships. 19
 School Psychology. Educational and. 36
 Sexual Harrassment Policy. 2
 Sociology Department. 60
 Special Credits. 27
 Special Education and Clinical Services Department. 42
 Special Fees. 15
 Specialist for Administrative Certification Program. 14
 Specialist Programs. 14
 Speech and Hearing Clinic. 10
 Speech-Language Pathology (*see Special Education and Clinical Services*)
 Sport Sciences (*See Health and Physical Education*)
 Stafford Loan. 20
 State System of Higher Education. 113
 Student Activity Fee. 15
 Student Affairs in Higher Education (*see Counseling, Adult Education, and Student Affairs*)
 Student Conduct. Guidelines for. 11
 Student Cooperative Association. 12
 Student Developinepnt Center. Counseling and. 11
 Student Employment. 19
 Student Grade Appeal Policy. 28
Student Handbook. 9
 Student Health Insurance. 11
 Student Loan Programs. 20
 Student Organizations. 12
 Student Publications. 9
 Student Rights and Responsibilities. 27

Student Status, 25
 Student Teaching, 79
 Students with Disabilities, 10
 Summer Sessions, 16
 Summer Sessions Fees, 15
 Supervised Laboratory Experience, 18
 Supplementary Loan for Students, Federal (SLS), 20

T

TESOL (*see English*)
 Teacher Certification, 27
 Teaching Associates, 19
 Teaching of English to Speakers of Other Languages (*see English*)
 Telephone Numbers, 112
 Telephone Registration (TELREG), 21
 Telephone Service, 10
 Terminal Registration (TERMREG), 21
 Termination of Residence Hall or Dining Hall Service
 Contracts, 17
 Teaching English (*see English*)
 Testing Fee, 9
Thesis/Dissertation Manual, 10
 Time Limitations, 27
 Transcript Fees, 15
 Total Withdrawal from the University, 16
 Transfer Credit, Doctoral, 23
 Transfer Credit, Master's, 22
 Trustees, 113
 Tuition and Fees, 15

U

Undergraduates, Graduate Course Scheduling by, 25
 University Employment, 20
 University Health Service, 11
 University Senate, 7
 University Testing Services, 9
 University Withdrawal, 16

V

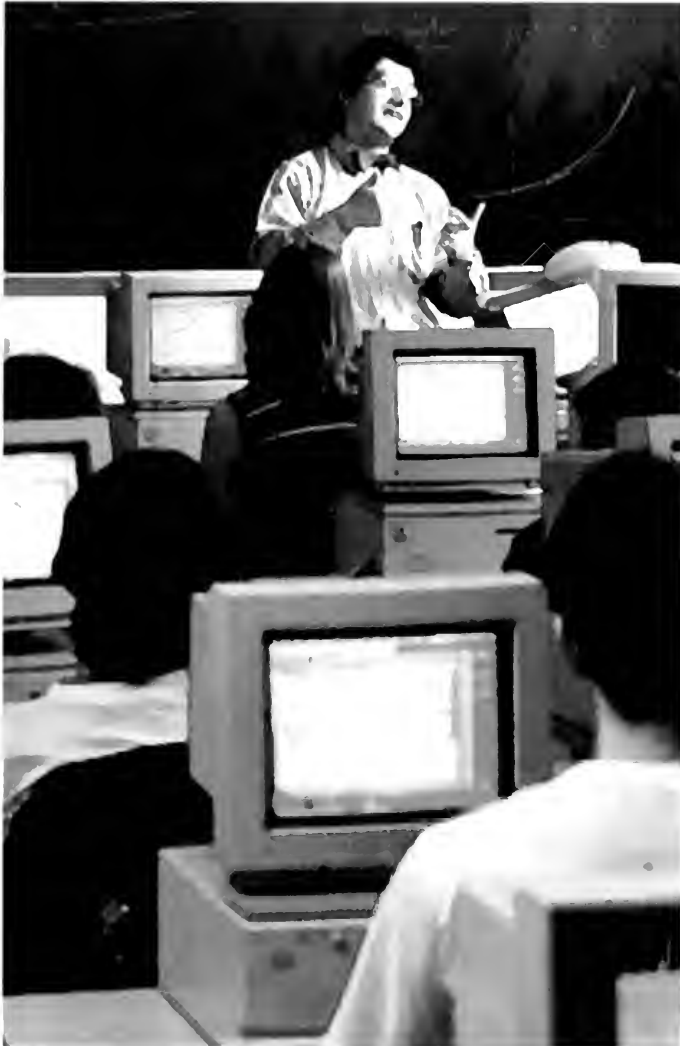
Veterans, 20

W

Walk-in Registration, 21
 Withdrawal Policy, Individual Course, 16
 Withdrawal Policy, Refund Policy, 16
 Withdrawal Policy, Total University, 16
 Work-Study Program, 19
 Workshops, 27

Indiana University of Pennsylvania

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